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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and to improve the character of the service rendered to the public.

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ASHTABULA AND CONNEAUT ORE RECEIPTS.

The ore receipts at Conneaut, O., for June took a slight tumble from last year's June figures, being 565,033 tons. This makes the total season's ore receipts at Conneaut 1,284,720 tons, being 500,000 tons' increase over the total figures of last year up to this date. Twenty-five thousand tons of coal were shipped coastwise and 13,880 tons foreign. The total value of imports amounted to \$5,074 and the value of exports \$65,783.

The ore and coal tonnage handled at Ashtabula during the month of June shows one of the best month's business in years, exceeding the tonnage of May this year and falling but a few tons below the business of June last year, which was the banner month in the history of this port.

The ore receipts the past month aggregate 657,793 tons, of which amount 12,608 tons came from Canadian ports. Coal shipments reached 189,166 tons and 277 vessels arrived and 274 cleared during the month. The ore receipts at Ashtabula county's two ports, Ashtabula and Conneaut, for May reached the enormous total of 1,197,923 tons.

CHANGING DISTRICT OFFICERS

It has been fully realized that the change of district department officers shortly after they had become acquainted with the full duties of their detail did not work to the best interests of river and harbor improvements, and aids to navigation work on the lakes.

Capt. George McKay, chairman of the committee on aids to navigation of the Lake Carriers' Association, believes there are altogether too many changes made by the Light-House Board at Washington, in the personnel of inspectors at the various ports on the Great Lakes.

"There is nothing that so much interferes with the establishment of fresh aids to navigation on the lakes than this constant shifting of officers from post to post," said Capt. McKay. "I have resigned every other position and devoted myself entirely to the work of looking after needed aids to navigation for the lake carriers, but I find that one of the chief obstacles in obtaining those aids is this intermittent removal of officers appointed to look over this work. I will frequently approach an inspector and demonstrate to him the necessity of a light here or a buoy there, and he will have about agreed with me as to the necessity of the proposed improvement, when along comes an order from Washington that the inspector has been removed to some other station, and I must begin again and tell the new incumbent all over again, and sometimes he doesn't see the need of the aid as his predecessor did.

"However, we are not kicking very strenuously just now, because we have been accommodated pretty well. The Kewaunee at Southeast shoal is a constant charge on our hands, and we wish the government would purchase her."

EXPORTS AND IMPORTS OF IRON AND STEEL.

It has become apparent that the exports of manufactures, other than iron and steel, in the eleven months of the present fiscal year are greater than those for the same period in any preceding year in this history of our commerce.

While the exports of iron and steel have been decreasing, importations of iron and steel have been increasing. The following table shows the imports and exports of iron and steel manufactures in eleven months of each of the fiscal years 1900, 1901 and 1902:

Eleven months.	Imports. Iron & Steel	Exports Iron & Steel.
1900	\$18,689,857	\$110,038,875
1901	16,408,996	109,483,827
1902	23,544,325	90,780,571

From this it will be seen that the importations of iron and steel manufactures have materially increased during the three years, and the exportations of iron and steel materially decreased. The cause of this change in the condition of the foreign commerce in iron and steel is discussed in the report of the Iron and Steel Association, just received by the Treasury Bureau of Statistics, as follows:

"A marked change has taken place in our foreign trade in iron and steel since this subject was prominently referred to in our annual reports in 1899 and 1900. In 1899 and immediately preceding years, the iron and steel industries of Europe were exceptionally prosperous; there was an active demand and prices were high. In the years just prior to 1899 the price of iron and steel in the United States were lower than they had ever been. Under these conditions we naturally found opportunities to dispose of our surplus iron and steel products in neutral markets, and even in the home markets of our European competitors. But these conditions have materially changed; the European demand and European prices have declined, and the home demand upon our own iron and steel works, has greatly increased, while our prices have advanced; hence sharper competition in neutral and all foreign markets and increased foreign competition in our own markets.

"The figures of increased imports and decreased exports of iron and steel should not be hastily dismissed by our iron and steel manufacturers. We hope that they will lead them instead, to dismiss the thought that the world's markets for iron and steel are to be easily captured and held. The activity in our export trade in iron and steel in the last few years was exceptional and abnormal. Not only is Europe adopting our improved methods of manufacture, but it will always have cheap labor, and by these agencies it can hold its own markets and actively and aggressively contend for the possession of neutral markets. For our iron and steel industries, as well as for all other domestic manufacturing industries, our home market must always be our best market."

ASTRONOMICAL DATA FOR JULY.

Astronomical data for July, 1902, furnished the MARINE RECORD by the Washburn observatory:

Two of the bright planets have now come into such position that they may be observed in the evening. Jupiter, the brightest of these, rises in the evening and is a brilliant object in the southeastern sky. Saturn, the other member of the pair, and far less bright, rises more than an hour earlier and farther south. Mars, Venus, and Mercury are all seen in the morning sky, rising in the order named, and all from nearly the same point on the horizon as the sun. Mars is the ruddy planet and is followed closely by Venus, the brilliant morning star. Mercury reaching greatest elongation west July 15th, on which date it rises about one hour after Venus.

The times of sunrise and sunset at Milwaukee for the month are as follows:

	SUNRISE.	SUNSET.
July 1.....	4:16	7:34
July 11.....	4:22	7:32
July 21.....	4:30	7:25
July 31.....	4:40	7:16

The times of the moon's phases are:

New moon	July 5.....	6:59 a. m.
First quarter	July 12.....	6:47 a. m.
Full moon	July 20.....	10:45 a. m.
Third quarter	July 27.....	11:15 p. m.

The principal fixed stars visible in the evening hours during the month are:

To the west: Arcturus and Spica. Near the meridian: Antares. To the east: Vega and Altair.

ANNUAL IRON AND STEEL REPORT.

The Annual Statistical Report of the American Iron & Steel Association for 1901, compiled by James M. Swank, has been issued. It embraces all the leading features of previous reports and also many new features. The tables relating to the production of pig iron have been greatly extended and now embody many technical details never before published. The department of the report which is devoted to prices has been enlarged.

A careful inquiry has been made concerning the per capita consumption of pig iron in the United States in the decennial periods from 1850 to 1900, and the result of the inquiry are given. The recent rapid development of the iron and steel industries of Canada has justified an exhaustive inquiry into the present statistical position of these industries, and the results of this inquiry occupy several pages. The report closes with a fresh study of the world's production of iron and steel and iron ore and coal in 1899 and 1900, the last two years of the nineteenth century, and with British and German statistics for all these products for 1901. The statistical tables presented in this connection are the most comprehensive the association have ever published. The necrological record is continued for 1901 and 1902.

Full details are given in the report of the production of iron ore and the various forms of iron and steel in the United States in 1901, and immediately preceding years. The shipments of iron ore from the Lake Superior and other mines, the imports of Cuban and other iron ore, the production of coal and coke, the imports and exports of iron and steel and coal and coke, the imports of manganese ore, the prices of Lake Superior iron ore, the prices of iron and steel, the tonnage of iron and steel vessels built in 1900 and 1901, immigration in 1901 and previous years, etc., etc. Full statistics are given of Bessemer, open hearth, crucible, and miscellaneous steel castings. Statistics of the production of tinplates from the beginning of the industry in this country are also given.

CONGRESS ADJOURNED.

The first session of the Fifty-seventh Congress was one of the most important in the history of the country.

The most important measure which failed of action is the Cuban reciprocity bill. Following is a list of the more important bills which passed, in addition to regular appropriation bills:

Isthmian Canal, Permanent Census Bureau, War Tax Repeal, Oleomargarine, Chinese Exclusion, Cuban Diplomatic, Philippine Tariff, Irrigation, Bank Charter Extension, \$200,000 for Martinique Relief.

Bills which failed to become laws include the following, several of which may receive favorable action at the next session of Congress:

Ship Subsidy, Immigration, Anti-anarchy, Labor Conspiracy, Omnibus Statehood, Department of Commerce, Southern Forest Reserve, Pure Food, Marine Hospital Service, Fowler Currency, Popular Election Senators, Hill Silver Coinage, Army Reorganization, Anti-Trust, Babcock Low Tariff, Bankruptcy Law Changes, Revenue Cutter.

RIVER AND HARBOR WORK.

Gen. Gillespie, Chief of Engineers, Corps of Engineers, U. S. A., has completed preliminary arrangements for the extension of the provisions of the river and harbor act recently approved by the President.

Copies of the act have been forwarded to the engineer officers in charge of the different districts calling attention to the specific works of improvements provided for within the limits of their districts, and requesting them to submit as soon as practicable, projects for expenditure of the amounts appropriated, specifying in each case to which portion of the work it is proposed to apply the funds, reference being had to the approved plan and to the estimate on which the present appropriation is based.

Defenses.—In a suit by commissioned branch pilots to restrain a defendant who had been created a branch pilot acting as such, it is no defense that complainants have confederated together to prevent defendant from becoming a branch pilot, and from pursuing his occupation as a pilot. Olsen vs. Smith et al., 68 S. S. Rep. (Tex.) 320.



DULUTH-SUPERIOR.

Ore shipments for June were 2,135,357 tons, against 1,830,665 tons last year. By ports the shipments were: Duluth, 781,890 tons; Superior, 801,012 tons. From Two Harbors the shipments for the season have been 5,006,786 tons, against 2,764,970 tons for the same time last year.

Receipts of hard coal have entirely ceased, owing to the strike in the anthracite coal regions, and soft coal receipts have been light. The amount on the local docks is comparatively small, both of the bituminous and anthracite coal. It is feared that if the troubles in the coal regions continue, manufacturing interests in the west may be seriously handicapped. As it is, the majority of coal on the Superior and Duluth docks belongs to the railroads.

The contract for erecting the sheds for the Portage Coal and Dock Co., at Houghton, Mich., has been let to M. J. Peppard & Co., of Minneapolis, and work on the contract has been started. The wharves on which the sheds will stand were completed last week by C. J. Johnson. Much of this work was sublet by Mr. Johnson to Hugo & Tims, of Duluth. When completed the new sheds will have as great storage capacity as any on Portage Lake.

The first coal to be received at the new Jones & Adams dock is expected to come in about the first of this week. The dock is now completed, and all that is delaying the work is the absence of a few buckets, which will be used in the coal hoists. With the Jones & Adams and the new Northwestern docks in operation Superior's importance as a coal market will be increased, and unless strikes or other unavoidable difficulties arise, it is believed the coming year will show a marked increase in the business.

Submarine divers sent down to examine the Thomas Wilson, report that the big whaleback is nearly cut in two. The steamer Hadley struck her at a sharp angle on the port side, and made a V-shaped incision just forward of the boiler room turret. The immense wedge was driven half through the hull. No bodies were found, and while the decks remain intact, the hatches are blown off. It is understood that no effort will be made to recover any portion of the sunken property. The hull is in ten to twelve fathoms, with a soft, muddy bottom not fit for divers to work in.

The Barker dredging plant, of West Superior, has been transferred to the Lake Superior Contracting Dredging Co. The twenty-nine tugs, scows and dredges of the Barker plant will pass at once into the hands of the purchasing firm, which is a consolidation of the Williams & Sons' plant, and that of the Barker estate. It can put into service thirteen dredges, two of which are of the modern hydraulic type, thirteen tugs and about thirty scows. Capt. E. T. Williams is manager of the consolidated firm, the business transactions of which will be carried on from the Minnesota side of the bay.

The Highland Canal & Power Co., of Duluth, sent Engineer Fair to Washington this week to take up the case of the canal people who are asking for the privilege of building dams across the rivers in Northern Minnesota and the erection of an immense storage reservoir in the watershed back of Duluth for the purpose of furnishing power to the head of the lakes. The report that Capt. Gaillard, Corps of Engineers, U. S. A., stationed at Duluth, to whom the matter was referred a few days ago, makes no specific recommendations. Capt. Gaillard says there is no serious objection in his judgment to granting the permit. H. Oldenburg, attorney of Carlton county, has filed formal protest at the War Department against the building of dams across the Cloquet and St. Louis rivers, claiming that they would divert the channels, overflow valuable lands and prove a great damage to the logging and farming interests.

A division in the office of the local steamboat inspectors has resulted from the trial of the striking tugmen. When the case was called Wednesday last, Attorney Spencer, for the towing trust, moved for a continuance. Hull Inspector Monaghan was agreeable, considering the motion reasonable, while Inspector Chalk insisted that the trial be continued or that it go over until December 1, when navigation closes. As the two inspectors could not agree, the question was referred to Supervising Inspector Sloane. In speaking of the position he had taken, Inspector Chalk said: "I believe that the company has had plenty of time to prepare its case. It simply means that, to continue from one day to another, the tugmen, the most of whom have obtained other positions, will have to leave their work and come to Duluth. If the trial cannot be held at this time, I would favor having it set over until December, when it will not interfere with the men's work."

CHICAGO.

While waiting to tow out the passenger steamer Christopher Columbus on Saturday, the Goodrich Line tug-boat Arctic, lost her smokestack in the swing of Rush street bridge while allowing the steamer Puritan to pass.

The efforts to induce the lumber handlers to refuse to unload the steamers Pewaukee and I. N. Foster, because they carried non-union crews, failed because the vessels are enrolled in the Lumber Carriers' Association, with which the lumber handlers' union has a season agreement which cannot be violated.

The steamer Panay was launched at the South Chicago yards of the American Ship Building Co. on Saturday. Miss Maud Carter, of Erie, Pa., daughter of General Manager C. H. Carter, of the Erie Steamship Co., owner of the Panay, performed the christening ceremony. The Panay is to be read- for her first trip to Lake Superior by August 1.

The Chicago river reached the highest point of the season on Saturday last when the register showed over eighteen feet of water on the crown of the Washington street bridge while allowing the steamer Puritan to pass. These marks are nearly three inches above the highest point reached before this year. The north branch was sending a strong current into the main river.

The Barry Muskegon Line has refused an offer of \$150,000 made by the Cleveland & Detroit Transportation Co. for the steamer Charles H. Hackley. The latter is said to be a company backed by Michigan and Cleveland parties for the purpose of operating in opposition to the Detroit & Cleveland Navigation Co. between those two cities. The Manitou has also been spoken of as a likely boat for the route.

Notice has been issued by Commander Lucien Young, U. S. N., inspector for the Ninth Light-House District, that the master of the steamer Tuscarora reported to the branch hydrographic office, Navy Department, Chicago, that while en route from Chicago to Manitowoc, Wis., and when about four miles south of Manitowoc, Wis., and two and one-half miles off shore his vessel struck a rock with but thirteen or fourteen feet of water over it. The information given was very meager.

After having been held in Milwaukee for twelve days slowly getting rid of a cargo of 95,000 bushels of wheat which she brought down from Duluth for B. Stern & Co., the steamer Harlem reached South Chicago to discharge the remainder. From this point the grain will no doubt be sent back to Milwaukee in cars. The experience of the Harlem is of a peculiarly exasperating kind and no doubt will lead to litigation, both on the part of the owners of the grain and the owners of the vessel.

When the work of putting in the new steel bridge for the Chicago, Milwaukee & St. Paul Railroad in the Ogden Canal, above Weed street, is completed it will be possible for steamers of the largest size to make the turn around the north end of Goose Island without assistance. The old stone center pier will be removed, as the new structure will swing clear of the river, leaving an unobstructed channel. Rapid progress is being made with the work, and it is expected that the new bridge will be ready for use in a couple of weeks.

Wednesday was the fifth day of the star chamber examination of the striking tugmen before the Local Steamboat Inspectors, on the charge of conspiracy to hinder navigation. The slow progress made thus far is eliciting much comment in marine circles. Some of these interests go so far as to intimate that the whole proceeding is a farce. It is known that some of the tug company people do not entertain the utmost confidence of winning the case. The license question should never have been brought up at all, as it is inapplicable.

Charles McCarle, grand president of the Licensed Tugmen's Protective Association, was held on the stand all day on Saturday in the trial of striking tugmen before the government steamboat inspectors. This completed two days' testimony from McCarle who was also under fire from the tug trust's attorneys all day Friday. Indications are that the trial of Charles Roach, the first case of twenty-five pending, will not be completed until the middle of the week. The examination was a star chamber affair, and the officials of the Great Lakes Towing Co., or the Dunham Towing Co., of Chicago, which company preferred the charges of conspiracy against the men, were excluded from the room in which the trial is being held. The only representatives of the tug company present were its attorneys, Frank Masten and Charles E. Kremer, who have special permission from Washington to prosecute the case. Mr. McCarle was simply a voluntary witness, and it is said he has revealed little, if any, evidence. Nobody seems to know what the prosecution is trying to get at through its course of procedure thus far. Legal circles are watching the outcome of the case with eagerness, since there is no precedent. The famous Mississippi river pilots' case, lawyers say, does not present a conformity only in spirit. There appears to be nothing to guide the present case, save section 4,449 of the statutes governing steamboat inspection service, which is held to be indefinite in its wording as regards the binding of an engineer or pilot to his license. These are points which must be determined. The men, it is understood, will stand firmly on the ground

that they were discharged; that there can be no conspiracy; that it is their constitutional right to work for whom and where they choose, and that their government licenses simply qualify them for the positions for which they are examined, and that there is no case against their licenses for local inspectors to inquire into. There is a growing feeling that some sort of persecution is emanating from Washington.

Appraisers have fixed the value of the wrecked steamer Hadley as she lay on the beach at Duluth at \$23,127, exclusive of \$13,000 for wrecking expenses and \$1,000 for cargo and incidentals. Report of the finding was received here by C. E. Kremer, Esq., from Howard T. Abbott, one of the appraisers. Under the limited liability act the owners of the \$100,000 whaleback steamer Thomas Wilson, sunk by the Hadley, can get judgment only for the appraised value of the Hadley in case suit is brought, as is expected. As facilities for repairing wooden boats at Superior are not good, the Hadley has been ordered to the Milwaukee yards of the American Ship Building Co., for repairs.

The Goodrich Line which has brought the tug Arctic from Manitowoc to tow the steamers Christopher Columbus and Virginia in and out of port, was notified that it must place two crews on the tug. As the Arctic makes but four tows a day the officials of the Goodrich Line declined to obey the mandates of the union. The crew are union men and will likely live up to the rules of their organization. It is also said that if the local inspectors of steamboats would notice the infraction of rules, tugmen would not be kept continually on duty for longer periods than twelve hours at a stretch. On duty every twenty-four hours lessens a pilot's alertness and courts trouble.

BUFFALO.

As an effect of the coal miners' strike the total shipments of coal from Buffalo for the month of June aggregated but 2,123 tons.

The after section of the steamer Minnewaska, of Duluth, which was aground in the St. Lawrence since June 16, has been released, and proceeded to Montreal.

The barge Brunette, which stranded in Georgian Bay late last fall, and has just been thoroughly repaired at Tonawanda, will hereafter be known as the Buffalo. The stern has been shortened fifteen feet and made square.

The Great Lakes Towing Co. has put a third tug, the Conneaut, into service here. She is manned by a crew from the upper lakes. Double crews have been put on all the independent tugs, and it is claimed that all the striking tugmen are now employed.

Insurance agents declare that their losses on lumber so far this season exceed those of last season, which were supposed to have reached the record up to that date. Though it is not a matter of exact figures how much the losses are, such cases as the Magill, Bourke, and Dashing Wave cannot fail to count up.

The steamer Sevona, Capt. D. S. McDonald, bound down with ore, went hard aground on Seneca shoal, on Tuesday. After four hours' work the tugs Delta and Butler, of the independent fleet released the steamer without lightening any of her cargo. The Sevona was towed to the Lehigh Valley dock, apparently uninjured.

The July supplement of the Inland Lloyds contains the names of three steel steamers owned by William Peterson, Ltd., Newcastle, England, and built at Sunderland several years ago. They are boats of 2,000 tons gross and are named the Turret Cape, Chief and Court, rated at 41 and given a valuation of \$110,000.

At a meeting of members of the Western Elevating Association it was voted to continue the association and to maintain during the next year the elevating charges now in effect. Reports presented to the association show that the receipts of grain for the present season to date fall 3,000,000 bushels below those of the same period last year.

Officials of the new Empire Ship Building Co. deny all knowledge of a plan to combine the independent shipbuilding yards on the Great Lakes. They admit, however, that the reported combination may come about. Vesselmen here believe that if the consolidation plan is carried out the result will not be a company in opposition to the American Ship Building Co., but the absorption of all the independent yards by that trust.

Canal shipments for June have shown a falling off from the preceding month, but have been considerably in excess of June shipments last year. The total amount of grain sent forward was 2,324,297 bushels, as follows: Wheat, 1,549,602; rye, 76,850; corn 205,560; barley, 40,181; barley malt, 48,288; oats, 403,816 bushels. The full number of clearances issued from the opening of navigation to date have been 929. Total clearances for June 436.

The canal committee of the New York Produce Exchange, which is working to have the question of the rebuilding of the Erie canal referred to the people at an early date, has prepared a table showing the principal grain shipments through Canadian ports and American. The committee observes that Canadian routes are drawing more and more American traffic away from American routes, and they hold that the rebuilding of the canal so as to carry 1,000-ton barges would lower rates and rehabilitate the traffic of this port. The present Canadian

routes that are cutting into rail and canal shipments to New York are by the way of Georgian Bay and the St. Lawrence river, and the rate to Liverpool by this route is at present 1½ cents a bushel cheaper than via New York. Canadian shipments for the week ended June 28 are shown to be greater than New York's by 617,143 bushels, and greater than those of all the chief American ports on the Atlantic by 259,459 bushels. The total shipments of all grains by the way of Canadian ports for the week were 1,002,265 against 742,806 by American Atlantic ports.

After serving at various stages of her career as a passenger steamer, package freight liner, and in the coal and ore trades, the steamer Nebraska is now being remodeled for use in the lumber trade. For two years the Nebraska has been lying idle at a dock in Milwaukee, having been taken there after stranding in Thunder Bay, Lake Huron. The steamer was sold recently to Samuel Neff, of Milwaukee, by the insurance companies, and by him transferred to J. J. Bolan and others, of Buffalo. The alterations will cost about \$12,000.

The blast furnace of the Tonawanda Iron & Steel Co., which has been tied up by a strike since early in April, will start up again July 5. Sufficient help has been secured, consisting of former employees and new men, to operate the plant. Sufficient ore has been accumulated to keep the furnace running for several months. In addition to its own fleet to bring forward ore, the steel company has secured the steamer Ralph and consorts Harold and Connelly Bros., and the steamer Watson. These boats have been engaged in the lumber trade. During the strike the plant has been put in fine condition.

Manistique and Portage Lake divided three small cargoes, (2,750 tons) of anthracite last week and nothing more was done. The eighth week in the coal miners' strike sees a settlement apparently as far off as at any time since mining ceased. A recognition of the miners' union is the principal cause of the contention, other demands being subordinate to the main issue. There is also a shortage, or at least no surplus, of bituminous, as the miners are curtailing the output, and fears are felt that the non-union mines in Allegheny and Reynoldsville may close down in sympathy, in which event there would be a deplorable shortage. The union miners will observe their contracts with the operators and will not break their agreements.

After twelve hours' work as captain of the trust tug Babcock, Capt. Walter Judd tore down his license and left the vessel. Judd is a Tonawanda man and has been a member of the Buffalo lodge of licensed tugmen. He said in quitting work that he could not endure the jibes of union men along the water front. It is claimed that the tug trust will have a full fleet in service here at whatever cost. The other members of the Babcock's crew are from some upper lake port, and will probably stay at work.

Andrew Boehringer, a seaman who was employed on the steamer Troy and who had his left leg torn off by a tow rope, was granted \$675 damages in the United States District Court. He sued to recover \$10,000. The accident occurred at Duluth last year.

The unemployed tugmen propose to carry their case to Senator M. A. Hanna, with the expectation that he will intercede in behalf of arbitration. The officials of the Licensed Tugmen's Protective Association are confident that Senator Hanna will be able to bring about an early adjustment of the trouble. It is claimed that, while he has never participated in the management of the tug trust, he holds some stock in the concern. This, in connection with his powerful influence, will, it is thought, put him in position to adjust the difficulty as no other man could. It is also learned that the Secretary of the Treasury, Elihu Root, is disposed to push the cases of license cancellation against the tugmen and that he has so instructed the Inspector-General of the Steamboat Inspection Service. If such is the case, and it comes from good authority, Senator Hanna can well be appealed to to straighten out the tangle, especially as the Secretary of the Treasury can only be acting from hearsay or prejudiced representations.

Wm. Petersen arrived at Montreal and will have three of his turret steamers on the lakes between Port Arthur, Port Colborne, Buffalo and other ports in a few days. He also states that other boats would follow, as he believed the turrets would prove model grain carriers. The Newcastle ship owner was asked if he expected to be recouped the \$50,000 deposited with the Canadian Government at the time he attempted to float a Canadian fast line, and he replied that it would be a particularly hard case should a refund be impossible. When he put up the \$50,000 he did not declare that he had the \$2,500,000, but apart from the deposit in question, the spending of \$80,000 of his own money manifested his good faith, and he said his failure to float the enterprise had been brought about by circumstances absolutely beyond his control. This view he considered would be shared by the Canadian people. They had seen, in fact, Mr. Connors, of Buffalo, make a declaration that he would carry on certain improvements in the harbor of Montreal; the contract had also been signed and a deposit was made, and although Mr. Connors failed to perform the work his money was returned; and in view of all this Mr. Petersen could hardly believe that when the evidence of his own good faith had been made so clear his case would be treated differently from the one mentioned.

DETROIT.

The steamer A. E. Stewart, will be launched at Bay City July 8, and will then be towed here for her machinery and boilers.

It has been reported to the light-house inspector that the gas buoy at the lower end of the St. Clair Flats has been carried away by some vessel. The present location of the buoy is not known.

The steamer Sailor Boy has been chartered to run between Toledo and Monroe, Mich., on the Raisin river. She will be sailed by her owner, Capt. Richard Armstrong, of Detroit. Toledo parties will manage the steamer.

Capt. James S. Moiles, for the past two years master of the Marcia, died here on Thursday last, of typhoid fever, after an illness of three weeks. He was 54 years of age, and had sailed the lakes since 12 years old. He leaves a widow and four children.

Herman Kolch and John Lenkeitus, both young men, were drowned off the steamer Tashmoo on Tuesday, as she lay at her dock. The men were scrubbing one of her paddle wheel boxes when the plank they were standing on gave way, throwing them into the river. Lenkeitus leaves a family.

Capt. E. B. Marquette will retire from the command of the steamer F. L. Vance, about Aug. 1, to take charge of the new light-house tender. He will be succeeded by Capt. F. W. Van Patten, of the steamer Roswell P. Flower. The vacancy on the latter steamer will be filled by the promotion of Edward Zwemer from the position of first mate.

A special from Alpena says: Tom Garrity, keeper of the Presque Isle light, picked up a sealed bottle Saturday containing a note as follows: "Steamer Hudson, off Keweenaw Point, rolling like a ball and all hands ready to give up the ghost. An Oiler." The paper had turned yellow and the writing is in pencil. The Hudson was lost last fall on Lake Superior with all hands. The note in the bottle is regarded as genuine.

The Inspector General of the Steamboat Inspection Service, James A. Dumont, has issued an order from Washington, to the Local Steamboat Inspectors, and to all the attorneys of the Great Lakes Towing Co., to appear at the prosecution of the striking men and to cross-examine the defendants and their witnesses. Should a conviction be secured under this arrangement, at Chicago, it is probable that the licensed tugmen will appeal the cases on the ground that Mr. Dumont is exceeding his authority, and is favoring the tug trust.

The United States Geological Survey has resumed field work for the topographic mapping of a portion of Michigan. The special map on which work is now being done will be known as that of the Ann Arbor quadrangle, representing the district surrounding the city of that name. Like other topographic maps issued by the Geological Survey, not only the ordinary features will appear in detail, but also the relief or topography of the country, with elevations above sea level. Topographic features of special interest which will be represented on the Ann Arbor map are the terminal moraine passing through Ann Arbor and the old shore lines of Lake Erie. Naturally the professors and students at the university are interested in the work, and it will afford the students an excellent opportunity for field practice. The work is under the supervision of Topographer E. C. Bebb.

Secretary-Treasurer Henry C. Barter, of the International Longshoremen's Association, whose office is at this port, said that there is absolutely no truth in the report to the effect that at the annual convention in Chicago next month an alliance with the Licensed Tugmen's Protective Association would be attempted. Mr. Barter says that no organization can affiliate with the longshoremen while they have a strike on hand, as the I. L. A. is not borrowing trouble. When the tug strike is settled and the tugmen get back to a working basis there may be chances of their becoming a part of the longshoremen, but not under present conditions. Several propositions to affiliate with the International Longshoremen's Association will be made at the Chicago convention, which will open July 12. Since the last convention in Toledo a year ago 105 new locals have been gathered into the folds.

There are strong indications that several cities on the lakes will make an eager effort to secure the naval training station, for which a preliminary arrangement is made in the naval appropriation bill recently passed in Congress, which provides for the appointment of a board of naval officers to make an examination and report concerning several proposed sites and the practicability and probable cost of such an establishment. Several Michigan cities, including Marquette, St. Clair and Lunington, are striving to devise means to secure the station, and Detroit, with its almost unequaled river front, will also doubtless make a play for it. Milwaukee will make a strong bid for it, and her claims are being ardently supported by the Representatives and Senators from Wisconsin. Some doubt exists, however, as to whether or not the latter city could provide a suitable site. Minnesota and Illinois are preparing to present their claims for the institution, which all recognize will develop into one of considerable importance.

CLEVELAND.

The first of the Mitchell steamers building at Lorain will be ready for launching in about six weeks.

Capt. Baker, of Duluth, has purchased the schooner Nellie Redington from her Cleveland owners, for \$12,000.

The attempt of the Pittsburg Steamship Co., to do its own towing at Ashtabula, with boats chartered from the Great Lakes Towing Co., has been dropped.

The small steamer Skater, owned by Capt. William Downs, has been chartered for the season to H. S. Lavine, of Cleveland. The Skater will be used in the excursion business between Cleveland and Euclid Beach park.

General Manager A. B. Wolvin, of the Pittsburg Steamship Co., who was here this week, said that his company was not going into the vessel towing business, and that no tugs would be chartered to tow the vessels of the big fleet.

The Portage Coal & Dock Co. has been organized, with W. P. Murray, of Cleveland, as president, and Harry G. Dalton, of Cleveland, secretary and treasurer. The capital stock is \$100,000. Docks with a storage capacity of 80,000 tons will be completed Aug. 1.

The tug Lutz, of the Great Lakes Towing Co., cleverly picked up the schooner Von Straubenzie last Sunday and saved her from being dashed to pieces on the breakwater. The Straubenzie was in tow at the time but the line parted as she was entering the port.

Fairport Harbor's commerce is booming and at present it is doing the largest business in its history. The receipts for June show it to be the banner month for all time in the past. The receipts aggregate 259,409 tons and the shipments of ore were 230,098 tons.

It is now reported that the cash capital of the new shipping firm, the Cleveland & Detroit Navigation Co., which was recently incorporated in Columbus, is about to be increased to \$500,000. Shippers here and elsewhere will be interested in the enterprise.

The Great Lakes Towing Co. have now a majority of their tugs at work, and the list is being added to daily. Their old employees are still on strike, but it is found possible to gradually secure other men who they find readily adapting themselves to tugboat work.

The C. B. Line chartered the large steamer Pasadena from Buffalo to this port with a general cargo. The regular passenger boats carry a large quantity of cargo, but, it commenced to pile up in such great quantities that extra tonnage was found necessary to clear up the receiving docks.

President McDonough, of the Licensed Tugmen's Association, who was shot by a member of the crew or one of the special officers on board the syndicate tug Grover, is getting along nicely, at Huron street hospital. Grand President McCarle, wired the local members of the association to spare no expense in making the injured man comfortable.

The steel steamer J. M. Jenks, recently built at the Lorain yards of the American Ship Building Co. for W. A. Hawgood, reached Ashtabula on Monday after her first round trip. She carried 6,101 tons of iron ore. W. A. Hawgood, managing owner of the steamer, went up the lakes with his family on the first trip made by the new boat and expresses himself as being satisfied with her.

The double daily service of the Detroit & Cleveland Navigation Co., is now open between this port and Detroit. It will be continued through the months of July, August, and a portion of September, or until the excursion season for the year is over. This completes the full service of the Detroit & Cleveland Navigation Co., every boat which it owns being now fully in service.

It has been reported during the past few days that the new Cleveland & Detroit Navigation Co., which was incorporated last month for a small sum, will increase its capital stock to \$1,000,000. It is claimed that a number of wealthy business men of Cleveland, Chicago and Detroit are behind the new company, and that the steamer Manitou has been practically secured for next season.

Capt. J. C. Ryan will appear before the Local Inspectors of Steamboats, to-day. Capt. Ryan, who was formerly in the employ of the Great Lakes Towing Co., is now master of the independent tug Edson. He is charged with refusing to tow the passenger steamer City of Detroit, on May 21. O. C. Pinney, Esq., attorney for Capt. Ryan, said yesterday that he would be ready to go ahead with the case.

THE OLDEST SHIP IN THE WORLD.

What is stated to be the oldest ship in the world has recently been sold at Teneriffe to be broken up. This is the Italian ship Anita, registered at the port of Genoa. The Anita, which resembled Christopher Columbus' ship the Santa Maria, was built in Genoa in 1548, and effected her last voyage at the end of March, 1902, from Naples to Teneriffe six or seven weeks ago. The Anita was of tremendously stout build, and had weathered countless storms and tornadoes in all parts of the world; but it was also the slowest ship afloat taking 205 days on one voyage.

PRODUCTION OF IRON ORE IN 1901.

The production of iron ores in the United States during the year 1901, as given by Mr. John Birkinbine in Mineral Resources of the United States, 1901, United States Geological Survey, David T. Day, Chief of Division, amounted to 28,887,479 long tons, as compared with 27,553,161 long tons in 1900, a gain of 1,334,318 long tons, or 5 per cent.; the gain of 1901 over 1898 was 9,453,763 tons, or 49 per cent., a phenomenal growth. The total value at the mines of the ore mined in 1901, as reported to this office, was \$49,256,245, or a mean value of \$1.71 per ton, an apparent decrease of 71 cents, or 29 per cent., from the 1900 figures of \$2.42 per ton. The value of the iron ores mined in 1900 was \$66,590,504. The largest amounts of iron ores officially reported to date, from any other countries, are 18,667,950 long tons, mined in Germany and Luxemburg in 1900, and 18,031,957 long tons mined in Great Britain in 1882.

Twenty-five states and one territory mined iron ore in the year 1901, the number of producing states remaining the same as in 1900, Utah dropping out and South Carolina taking its place. As in the year 1900, Minnesota contributed the greater portion of the increase for 1901, and advanced to first place as a producer, Michigan, which has uninterruptedly occupied this position since the year 1881, now being second.

New exploitations for standard ores in the Lake Superior district are being actively carried on, and in addition, some siliceous and lower grades of ores, of which large quantities exist, are liberally exploited. In the central west, valuable deposits of ore in Wyoming, Colorado, and New Mexico are being worked extensively to supply the Colorado furnaces. On the Pacific coast, the Irondale furnace in Washington has resumed operations, but its principal reliance so far has been on the magnetite deposits of Texada Island, in British Columbia.

In 1901 the red hematite mines contributed 24,006,025 long tons, or 83.10 per cent. of the total for the United States, an increase of 6 per cent. over the 1900 total. Minnesota was the largest producer of this class of ore, followed by Michigan and Alabama. The total brown hematite mined was 3,016,715 long tons, or 10.44 per cent. of the output of the country, a decrease of 7 per cent. from the 1900 record. Virginia and West Virginia, combined, lead as a brown hematite producer, followed by Alabama and Tennessee. Of magnetic ores, 1,813,076 long tons, or 6.28 per cent. of the United States total, were mined in the year 1901, an increase of 18 per cent. over the total for 1900. Pennsylvania was the principal contributor followed by New Jersey and New York. Only 51,663 long tons of carbonate iron ore was mined in 1901, being 0.18 per cent. of the total iron ore output for the year. Practically all of this came from Ohio, although Maryland, New York, and Pennsylvania contributed small amounts.

In the 13 years since the year 1889, when the United States Geological Survey began collecting the statistics of the amounts of the different classes of iron ore mined, the red hematites have contributed 180,551,009 long tons, or 76.85 per cent. of the total; the brown hematite mines, 30,945,504 long tons, or 13.17 per cent.; the magnetic deposits, 21,524,693 long tons, or 9.16 per cent.; and the carbonate ores, only 1,926,668 long tons, or 0.82 per cent. of the total.

The greater part of the iron ore in the United States continues to be supplied by the Lake Superior region, which produced its maximum output of 21,445,903 long tons in 1901, being 74 per cent. of the total quantity reported and an increase of 4 per cent. over the total for 1900. The Marquette range, in the state of Michigan, from which ore was first taken in 1856, has contributed, up to date, 62,847,473 long tons. Most of this ore is shipped from the ports of Marquette and Escanaba. The Menominee in the states of Michigan and Wisconsin, was the second range to be opened in 1877, and it has contributed to date, 37,621,428 long tons, the greater portion being shipped from Escanaba and a small amount from Gladstone. The Gogebic range, in the states of Michigan and Wisconsin, and the Vermillion range in Minnesota, began shipping in 1884, the Gogebic range having shipped to date 34,154,790 long tons from the ports of Ashland and Escanaba, and the Vermillion range having shipped to date 16,977,243 tons from the port of Two Harbors. The Mesabi range in Minnesota began shipping in the year 1894, and has shipped thus far a total of 40,404,967 long tons, and has now apparently greater resources of ore than any of the old ranges. In 1901 this range produced 9,303,541 tons, or 32 per cent. of the total for the United States. A sixth range was opened in Canada in the year 1900, the ore being shipped principally to the United States from the port of Michipicoten in the Province of Ontario, and the total output to the close of 1901 amounted to 284,679 tons.

From the above it appears that in the year 1901 the Mesabi range ranked first, producing its maximum output of 9,303,541 long tons, a total that has never been reached by any other iron ore region in the world, the Bilbao district in Spain being its closest competitor.

Taking the states in the order of their production we find that Minnesota contributed 11,109,537 long tons, or 38 per cent. of the total for the United States, and is easily entitled to first place. In fact, with the exception of the German Empire and Great Britain, no country in the world has reached so great a total in any year as the state of Minnesota in 1901, and this phenomenal product exceeded by 3,989,175 long tons the production of iron ore

of all the mines combined, as reported by the tenth census of the United States in 1880. Michigan ranks next with a total of 9,654,067 long tons of iron ore, a decrease of 3 per cent. from the total for 1900. Alabama ranks third, with a production in 1901 of 2,801,732 long tons, with nearly 10 per cent. of the total. Pennsylvania regained fourth place, contributing 1,040,684 tons, an increase of 19 per cent. over the state total for 1900. Virginia and West Virginia combined ranked fifth, mining 925,394 tons, an increase of nearly 4 per cent. over their total for 1900. Tennessee increased her output 33 per cent. over the total of 1900, and ranked sixth with 789,494 tons. Wisconsin came seventh, with 738,868 tons. New York was eighth, with 420,218 tons, a decrease of 5 per cent. over the state total of 1900. Colorado ranked ninth, with a total of 404,037 tons, a decrease of nearly 1 per cent. from the state production of 1900. Some of the Colorado ores carry enough silver to make them valuable on that account, and therefore they are not included in this report. New Jersey came tenth, with 401,989 tons, an advance of 17 per cent. upon the 1900 output. Georgia and the two Carolinas together contributed 215,599 long tons of iron ore; and none of the remaining states, except Wyoming, produced over 100,000 tons of iron ore.

EASTERN FREIGHTS.

Messrs. Funck, Edye & Co., New York, report the condition of the eastern freight market as follows:

Chartering business during the week has been on a limited scale, and what few fixtures have been effected show in most cases a decline in rates. Tonnage has had to depend principally on deals and timber from the British Provinces and the Gulf respectively, but in both cases owner's have had to make concessions in order to secure charters. The coal strike still prohibits any active movement in the export of coal from this coast to the Mediterranean and Continental ports. Cotton charterers both from the Gulf and Atlantic ports are inclined to wait for further developments regarding the cotton crop before chartering. One or two steamers are reported as having been closed for the next season, in addition to the two referred to in our last issue, but the particulars are not yet forthcoming.

Inquiry for sail tonnage has been exceedingly limited and although offerings are of a meagre order, the situation appears largely nominal in the absence of business of consequence. The payment of 10 cents on case oil to Calcutta is scarcely a criterion of the market, since the vessel is obliged to proceed to that destination.

AIRSHIPS AND FLYING MACHINES.

A feature of unique interest in the June number of the North American Review is the article by Santos-Dumont on "Airships and Flying Machines." It is the first article written by the celebrated aeronaut, and contains a lucid description of the principles on which his machines have been constructed. It is by a union of aerostation (whose principle requires a combination of materials lighter than the air it displaces) and aviation or the method of a bird's movement (which involves a combination heavier than the air) that Santos-Dumont has gained such success as has crowned his efforts. His airship is heavier than the air, but by using hydrogen gas in the balloon which is attached to it, and aluminum in parts of the mechanism which do not require the resistant qualities of steel, and by such devices, he has endeavored to keep down at a minimum the surplus weight which has to be supported by the dynamic action of the propeller. He expects that as the results of experiments which he has begun this year by increasing the extent of the inclined planes symmetrically disposed on both sides of the ship he can gradually diminish the role of the hydrogen until he has entirely eliminated it, and thus produce a veritable flying machine. In spite of the doubts expressed by such men as Lord Kelvin and Admiral Melville as to the practicability of aerial navigation on a useful scale, Santos-Dumont speaks with the utmost confidence of the outcome of his work. He says:

"For myself, ardently devoted as I am to the captivating study of aviation, I am persuaded that the airship, thanks to the hydrogen, will always have an advantage over the aeroplane in being able to carry a great quantity of combustible material for long journeys, a number of travelers and a considerable weight of merchandise—an advantage which will give it a practical utility unquestionably superior in commerce or in war. On the other hand, the flying machine will, without doubt attain for short distances an incomparable speed, the advantages of which will be in certain cases very appreciable—for instances, in crossing a strait like the Strait of Dover, in the journeys of the wealthy or in the transmission of despatches at a high rate. "But when I think that an airship of the length of the trans-Atlantic steamer Deutschland, constructed with the proportions of my 'No. 6,' would transport a thousand voyagers of my own weight, with a sufficiently powerful motor and the necessary amount of petroleum, from New York to Havre in two days, I cannot help finding the dirigible balloon more interesting than the aeroplane from the economic point of view, which is the dominant one in the world of to-day.

"This is not the conception of a romancer. It is an affirmation which I can easily make good by figures; and, what is better, it will, I am firmly convinced, within a few years have become an accomplished fact."

CIRCULATION IN BOILER TUBES.

In a paper recently read before the Societe de l'Industrie Minerale, M. Brull describes some experiments made to determine the circulation in the tubes of boilers of the inclined water-tube type used. A modified form of the well known "Pitt" gauge was used to indicate the nature of the flow in the tubes. This gauge consisted of a couple of tubes arranged concentrically. The inner tube was open at the ends, but the annular space between the two tubes was closed at the ends, though a couple of small holes were drilled through the outer hole into this space an inch or so from one end. This gauge was thrust through a hole in a specially prepared hand hole cover into the tube to be tested. The rush of water impinging on the open end of the inner tube of the gauge caused a rise of pressure there which would be greater, the greater the velocity of flow. The holes into the annular space of the inner tube being at right angles to this flow, the pressure in this annular space was only that due to the static head at the point of insertion. By connecting the inner tube and this annulus to opposite ends of a U-gauge which may be conveniently filled with oil, the intensity of the flow is indicated by the difference of level in the two arms of the U. In the boiler tested by M. Brull, the inclined tubes opened at each end into a water leg. It was found that with lower tiers of tubes the circulation was in the proper direction, but that the rate of flow was greatly affected by the operation of firing. Adding coal to the fire caused the difference of level in the U-gauge to fall from 4.5 in. to 3.75 in., but two minutes afterwards it had increased again to 6 in., and thence fell steadily down to little over 1 in. In the middle range of tubes the flow was always opposite to that intended by the designer, and its intensity was affected by the operations of the stoker, just as was the cause with the lowermost tubes. With the uppermost tubes the flow was also in the inverse direction, but was much more active than in the case of the middle tubes, and was, moreover, but little affected by the state of the fire. As the whole of the downward flow of the water was intended by the designer to take place down the back water-leg, it would seem that the abnormal flow in the upper and lower tubes must, by the cross-current introduced, considerably interfere with the proper circulation of the water.

THE LAKE LUMBER INDUSTRY.

The Census Bureau has completed the report based on the statistics collected in the last census year in Michigan and other states of the country. Facts in the report showing the condition of the lumber interests in Michigan are these.

The capital invested in 1900 was \$67,379,968. In 1890 it was \$129,467,072; in 1880, \$39,260,428; in 1870, \$26,990,45.

Of the three greatest lumber states bordering on the lakes—Michigan, Wisconsin and Minnesota—Michigan still contains the largest number of mills and Minnesota the smallest. In product, Wisconsin is the foremost, followed by Michigan and Minnesota in the order named. The lumber industry commenced in this lake region in the state of Michigan and has moved westward, so that Minnesota represents the latest stage in the lumber movement in this region. The mills are smallest in Michigan and far the biggest in Minnesota.

Of the prominent lumber states the highest wages are paid in Washington—\$5.42 annually. In Michigan the annual rate is \$4.25. In the southern yellow pine states the average annual wages is \$2.83.

The upper peninsula and the northern half of the lower peninsula were originally covered with heavy forests of conifers, consisting mainly of white pine. Southward, in the lower peninsula, hard woods were intermingled in increasing proportion, while the southern part was largely prairie. The result of a half century of lumbering is to reduce the white pine to a small fraction of its former stand, to make a good beginning on the other conifers. Much of the southern part of the lower peninsula has been cleared for cultivation.

The wood land of the state, including stump lands, is estimated to have an area of 38,000 square miles, or 67 per cent. of the estimated area. The stand of white pine was estimated by Sargent in 1880 at 35,000,000,000 feet, which, judging from the amount subsequently cut and that now supposed to be standing, was probably not far from correct. In 1896 Prof. Fernow estimated the coniferous stand at 18,000,000,000 feet, of which 6,000,000,000 was white pine. The last item is somewhat small, as the cut, plus the amount reported as owned, two items which we know quite definitely, foot up more than 6,000,000,000 feet.

With a relatively small production in 1850 and 1860, Michigan leaped in 1870 into the leading position as a lumber state and maintained that position until 1900, when, owing to the partial exhaustion of her resources, she fell slightly behind Wisconsin, but still remains the second state in the production of lumber.

Wharves—Injury to Vessel—Evidence Considered.—Evidence considered and held not to sustain the claim that an injury to the bottom of a libellant's barge was received through the defective condition of the bottom of the river at defendant's wharf, but to show that it was due to a previous grounding of the barge on some rocks. Fahy vs. Society for Reformation of Juvenile Delinquents. 114 Fed. Rep. (U. S.) 760.

MARINE HOSPITALS ON THE LAKES.

Contracts for care of seamen, etc.

TREASURY DEPARTMENT,
OFFICE OF SUPERVISING SURGEON-GENERAL M. H. S.,
WASHINGTON, D. C., June 19, 1902.

This circular is to be regarded as official notification of the acceptance of the proposals made by the parties designated, and must be cited, giving its number and date, on all bills for the treatment and maintenance of seamen, and for the burial of deceased hospital patients, as the authority for any expenditure incurred under its provisions. Charges will be allowed for the day of admission of a hospital patient, but not for the day of discharge or death. The right is reserved by the Secretary of the Treasury to terminate any contract whenever the interests of the Service require it. All relief must be furnished in accordance with the revised regulations of the Marine Hospital-Service; and, in consequence of the large expenditure for relief, and of the limited sources of income, it has become necessary to give notice that, as provided in the regulations, no allowance will be made for expenditures incurred at any port not named in this circular.

Upon admission to a contract hospital of a patient with a disease or injury which, in the opinion of the medical officer, the acting assistant surgeon, or physician in charge of the case, will require more than twenty days treatment in hospital, the officer issuing the permit will at once request authority from the Bureau to transfer such patient to the nearest marine hospital, provided the patient's condition, in the opinion of the medical officers, the acting assistant surgeon, or physician in charge of the case, is such as to admit of transportation.

The attention of customs officers, commissioned medical officers, acting assistant surgeons, or other physicians in charge of patients of the Marine-Hospital Service at contract stations, is hereby called to the necessity of discharging patients promptly upon the termination of the necessary hospital treatment, and without awaiting the expiration of the period authorized in the permit.

Ashland, Wis.—Dodd's Hospital to furnish quarters, subsistence, nursing, medical attendance, medicines, and ambulance service, at \$1 a day; contagious diseases, \$2 a day, and to provide for the burial of deceased patients, at \$15 each.

Ashtabula, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. Henry Whelpley to furnish quarters, subsistence, and nursing at \$1 a day; contagious diseases, \$1.50 a day; Gregory, Burwell & Co. to provide for the burial of deceased patients, at \$14 each.

Buffalo, N. Y.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; Buffalo Hospital (Sisters of Charity) to furnish quarters, subsistence, nursing and medicines, at \$1 a day; the health commissioners of the city of Buffalo to care for contagious diseases, at \$2 a day; Thomas V. Ray to provide for the burial of deceased patients, at \$5.50 each.

Chicago, Ill.—Hospital patients to be cared for in the United States Marine Hospital; B. E. Arntzen to provide for the burial of deceased patients, at \$15.50 each.

Cleveland, O.—Hospital patients to be cared for in the United States Marine Hospital; Wm. Abel to provide for the burial of deceased patients, at \$13.50 each, and to furnish ambulance service, at \$1 for each trip.

Detroit, Mich.—Hospital patients to be cared for in the United States Marine Hospital; Chas N. Flattery to provide for burial of deceased patients, at \$7 each.

Duluth, Minn.—The medical attendance to be furnished by an acting assistant surgeon; St. Luke's Hospital Association to furnish quarters, subsistence, nursing, and medicines, at 80 cents a day; Charles J. Stewart to provide for the burial of deceased patients, at \$16 each.

Erie, Pa.—The medical attendance to be furnished by an acting assistant surgeon; the Hamot Hospital Association, to furnish quarters, subsistence, nursing, and medicines, at \$1 a day.

Escanaba, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Delta County Hospital to furnish quarters, subsistence, nursing and necessary medicines, at \$1 a day.

Grand Haven, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Anna Farnham to furnish quarters, subsistence, and nursing, at \$1 a day; John J. Boer to provide for the burial of deceased patients, at \$11.75 each.

Green Bay, Wis.—The medical attendance to be furnished by an acting assistant surgeon; Ellen H. Hume to furnish quarters, subsistence, nursing, and medicines, at \$1 a day.

Houghton, Mich.—The medical attendance to be furnished by an acting assistant surgeon; St. Joseph's Hospital to furnish quarters, subsistence, nursing, and necessary medicines, at \$1.15 a day.

Ludington, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. H. D. Linsley to furnish quarters, subsistence, and nursing, at 80 cents a day.

Manitowoc, Wis.—The medical attendance to be furnished by an acting assistant surgeon, the Holy Family Hospital to furnish quarters, subsistence, nursing, and medicines, at \$1 a day; C. & W. Frazier to provide for the burial of deceased patients, at \$12 each.

Manistee, Mich.—The medical attendance to be fur-

nished by an acting assistant surgeon; Mercy Hospital to furnish quarters, subsistence, nursing, and medicines, at 90 cents a day.

Marquette, Mich.—The medical attendance to be furnished by an acting assistant surgeon; St. Mary's Hospital to furnish quarters, subsistence, nursing, and medicines, at \$1 a day, and provide for the burial of deceased patients, at \$6.45 each.

Menominee, Mich.—The medical attendance to be furnished by an acting assistant surgeon; St. Joseph's Hospital to furnish quarters, subsistence, nursing, and medicines, at \$1 a day; contagious diseases, \$3 a day; M. H. Kern to provide for the burial of deceased patients, at \$12 each.

Milwaukee, Wis.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; St. Mary's Hospital to furnish quarters, subsistence, nursing, and medicines, at \$1 a day; the commissioner of health of the city of Milwaukee to care for contagious diseases, at \$2 a day; patients who require hospital treatment and whose condition, in the opinion of the acting assistant surgeon, will permit their transportation with perfect safety, will be sent to the marine hospital at Chicago, Ill.

Ogdensburg, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; Ogdensburg City Hospital to furnish quarters, subsistence, nursing, and medicines, at \$1 a day; contagious diseases, \$2 a day; Fleming & Rutherford to provide for the burial of deceased patients, at \$14.50 each.

Oswego, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; the Oswego Hospital to furnish quarters, subsistence, nursing, and medicines, at \$1 a day; John F. Dain & Son to provide for the burial of deceased patients, at \$15 each.

Port Huron, Mich.—The medical attendance to be furnished by acting assistant surgeon.

Saginaw, Mich.—The medical attendance to be furnished by an acting assistant surgeon; St. Mary's Hospital to furnish quarters, subsistence, nursing, and medicines at 90 cents a day; contagious diseases, \$2 a day.

Sandusky, O.—The medical attendance to be furnished by an acting assistant surgeon.

Sault Ste. Marie, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Saut (Michigan) General Hospital to furnish quarters, subsistence, nursing, and medicines, at the rate of \$1.10 a day; Ryan & Co. to provide for the burial of deceased patients, at \$9.35 each.

Sturgeon Bay, Wis.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. Jane Waters to furnish quarters, subsistence, and nursing at \$1 a day; H. J. Hahn to provide for the burial of deceased patients, at \$13.50 each.

Superior, Wis.—The medical attendance to be furnished by an acting assistant surgeon; Belle Rosser to furnish quarters, subsistence, nursing, and medicines, at 85 cents a day; St. Mary's Hospital to care for contagious cases, at \$2 a day.

Toledo, O.—The medical attendance to be furnished by an acting assistant surgeon; The Toledo Hospital to furnish quarters, subsistence, nursing, and medicines, at 80 cents a day; contagious diseases, \$1.50 a day, and to provide for the burial of deceased patients, at \$12 each.

Under Department Circular No. 73, May 2, 1898, the United States Marine-Hospitals are made available, at the actual cost of maintenance, for the reception of the sick and wounded of the United States Army or the United States Navy, upon the written request of the proper military or naval authority.

The rate of charge for the care of seamen from foreign vessels (admitted under the act of March 3, 1875) will be \$1 a day at United States Marine Hospitals.

At second and third class stations seamen of the United States Navy and seamen from foreign vessels will be cared for at contract rates.

STATEMENT OF THE VISIBLE SUPPLY OF GRAIN.

As compiled by George F. Stone, Secretary Chicago Board of Trade Saturday, June 28, 1902.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo.....	559,000	127,000	85,000	33,000	122,000
Chicago.....	2,387,000	3,559,000	113,000	108,000	.....
Detroit.....	196,000	.....	1,000	4,000	.....
Duluth.....	4,628,000	42,000	.....	12,000	56,000
Fort William, Ont..	1,213,000	.....	.....	.....	.....
Milwaukee.....	83,000	123,000	69,000	2,000	16,000
Port Arthur, Ont....	80,000	.....	.....	.....	.....
Toledo.....	21,000	250,000	56,000	23,000	.....
Toronto.....	12,000	.....	22,000	.....	.....
On Canals.....	618,000	107,000	161,000	77,000	20,000
On Lakes.....	628,000	634,000	495,000	148,000	.....
Grand Total.....	19,760,000	5,687,000	1,565,000	484,000	238,000
Corresponding Date, 1901.....	39,793,000	15,158,000	10,782,000	619,000	436,000
Increase for week.....	.....	498,000	.....	.....	.....
Decrease " ".....	1,275,000	.....	483,000	10,000	43,000

While the stock of grain at lake ports only is here given, the total shows the figure for the entire country except the Pacific Slope.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLATED SPECIALLY FOR THE MARINE RECORD.)

Conformity to Pleadings.—Where a complaint by commissioned branch pilots seeks to restrain a pilot from acting as a branch pilot, the decree cannot include his associates, agent and employees. *Olsen vs. Smith et al.*, 68 S. W. Rep. (Tex.) 320.

Privileges and Immunities.—The invalid provisions of the state statutes relating only to coastwise vessels, as distinguished from foreign vessels, do not invalidate the act in toto; and the provision giving a pilot half pilotage, etc., against a vessel outside the bar refusing his services, remains valid. *Olsen vs. Smith et al.*, 68 S. W. Rep. (Tex.) 320.

Maritime Liens—Towage Services—Contract for Lien.—Evidence held to sustain a finding that there was a common understanding between the parties to a contract for towage services to be rendered to a dredge and scows that the services were rendered upon the credit of the vessels and not of the owner. *The Newport*, 114 Fed. Rep. (U. S.) 713.

Joint Lien for Services Rendered to Separate Vessels.—A joint lien cannot be enforced against a dredge and a number of scows used in connection therewith for towage services rendered to all the vessels, although they were rendered under a single contract. *The Newport*, 114 Fed. Rep. (U. S.) 713.

Supplies—Massachusetts Statute.—Vessels which went from Boston to Scituate, where they were employed for two weeks, left the port of Boston, within the meaning of Pub. St. Mass. c. 192 14 et seq., giving a lien for supplies where a statement is filed within four days after the vessel departs from the port where the supplies were furnished. *The William E. Cleary*, 114 Fed. Rep. (U. S.) 756.

Statutes.—Rev. St. 1895, art. 3796 et seq., prescribing the qualifications and regulating the appointment of branch pilots, is not violative of Const. U. S. Amend. 14, nor Const. Tex. art. 1, § 19, providing that no citizen shall be deprived of property, privileges, or immunities, except by due course of law. *Olsen vs. Smith et al.*, 68 S. W. (Tex.) 320.

Decree—Extent.—Under Rev. St. 1895, art. 3803, providing that, if any person not appointed a branch pilot shall pilot any vessel when a branch or deputy pilot has offered such service, he shall forfeit a certain sum, a decree restraining a defendant who has not been created a branch pilot from piloting or attempting to pilot any foreign vessels in or out of the Galveston port is too broad, since such article contemplates that under some circumstances an unlicensed pilot may act. *Olsen vs. Smith et al.*, 68 S. W. Rep. (Tex.) 320.

Steam Vessels Crossing—Excessive Speed and Failure to Stop in Fog.—In a suit for collision between two ocean steamships in a dense fog, while on crossing courses, it appeared that after entering the fog, both continued at more than half speed, in violation of the first provision of rule 16, that after hearing each other's fog signals, both proceeded with out stopping for some time in violation of the second clause of such rule; the vessels when they saw each other being within 500 ft., and unable to check their momentum in time to avoid collision. Held, that both must be held in fault, and the damages divided. *The El Monte*, 114 Fed. Rep. (U. S.) 795.

Extra Pilotage—Exemption.—Under Rev. St. 1895, art. 3801, exempting from extra Pilotage all vessels owned in Texas, when arriving from or departing to any port in the state, and the statute subjecting certain coastwise steam vessels to pilotage, and the treaty to Great Britain, December 22nd, 1815, providing that no higher duties shall be imposed in any United States port on British vessels than those payable in the same seaport by vessels of the United States, all British vessels are not exempt merely because certain coastwise vessels are relieved, since the exemption has not been extended to certain American ships, engaged in foreign commerce, and, until that is done, British vessels of the same character are equally subject to the statutes. *Olsen vs. Smith, et al.*, S. W. Rep. (Tex.) 320.

Right to Violate Rules—Contributory Negligence—Error in Extremis.—A ferry boat had no right to call on a sloop to give way or change its course, there being nothing to indicate peril or difficulty to the former in conforming to the accustomed rules of navigation. Even if there had been apprehension of immediate danger, as contemplated by Act Cong. Aug. 19, 1890 (25 St. 327) art. 27, requiring due regard to be had to special circumstances rendering a departure from the rules necessary to avoid danger, the ferry boat should have resorted to all other practical methods of avoiding the collision before violating the statutory requirements. Even if the sloop, on the signal from the ferryboat, luffed and changed its course for half a minute, and then suddenly again changed its course across the ferryboat's bow, the ferry boat would still be liable; the sloop's negligence being error in extremis. *The Elizabeth*, 114 Fed. Rep. (U. S.) 757.



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ESTABLISHED 1878.

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CLEVELAND, O., JULY 3, 1902.

It should be remembered that local pilots are not members of a vessel's crew, and, consequently, are not under the orders of the owners or masters, as they are unknown, on a ship's articles, therefore not amenable to the discipline and rules ordinarily governing the navigation of a craft. The term "pilot" as used on the lakes and the Mississippi river, differs from its application in the coastal and ocean service, where pilots are known only as local assistants to the shipmaster.

THROUGH the Woods-Frolic collision case at Toledo, and consequent loss of life, the local inspectors of steamboats at that port, found, after due and diligent inquiry, that the captain of the tug carried a passenger at the time without having a permit to do so, and for which they suspended his license for the period of thirty days. As the casualty took place a couple of months ago, and the findings of the court most likely dated from the time of the collision, Capt. Fitts can continue in his calling as heretofore. The collector of customs fined the tug \$500 for the offense, but it is understood that the penalty was remitted by the Treasury Department. The hearing before the collector of customs was carried out in an excellent manner, while the decision arrived at by the local inspectors of steamboats seems pitifully incompetent in several particulars.

SOME years after the whaleback form of model for cargo carriers had been exploited and their structural economy, as well as cargo carrying ability and general seaworthiness, had been widely dilated upon an English firm of shipbuilders, with imitative proclivities commenced building vessels which they named turret steamers. Like the lake built whalebacks this turret construction simply ignored the frolics of Neptune, even when in his most playful moods, and they were widely chronicled through the pages of marine papers as being the "cargo carriers and storm defiers" of the age. Needless to say that tramp steamers having these qualities are the best boats for the coastal and Atlantic trade, yet we now find three of them registered in Inland Lloyds as lake carriers and destined for traffic on these inland seas, or, as the deep water sailors might term them, land locked sheets of water and big ponds. This leads us to observe that no more whalebacks are being built for lake traffic and the turret form is sent to trade where there is apparently the least danger to be expected from peculiar formed floating structures and continuous heavy weather.

THE ST. LAWRENCE ROUTE.

With the placing of a contract this week for the construction of a fleet of ten steel steamships for the St. Lawrence trade, interest is again aroused regarding the safety of the river and canal route.

The recent casualty to the half section of the steel steamer Minnewaska and the delays the Counselman boats experienced in their trips to the Gulf, is not calculated to re-assure the promoters of the new line in their regular traffic via the river and canals, to and from Quebec, unless it is found possible to make the route less dangerous than it has been hitherto, yet this, perhaps, has been rendered more possible on account of aids to navigation, etc., being now placed in the hands of the Dominion Department of Marine, instead as being attended to as formerly by the Department of Railways and Canals.

It is also announced that the two large steel steamers built at Cleveland, the Minnetonka and Minnewaska will form the Atlantic link in the traffic from the lakes to European ports, thus carrying the interests of American owners, shippers and underwriters to the navigational situation below Quebec, and in fact to the mouth of the Gulf of St. Lawrence, by the Great Lakes and Quebec Transportation Co. being a tributary to the American Steamship Co.

Under the foregoing circumstances it is a matter of congratulation to find the Dominion Government fully alive to the necessity of facilitating St. Lawrence shipping and commerce, and to render aid in every possible direction to the outward and inward bound traffic. As a statement of fact, Canada has recently done much to render the St. Lawrence river and gulf navigation safer than ever before, and still further additions and improvements in this direction are at present under the consideration of the Marine Department.

That the St. Lawrence is shouldered with much evil which it is not accountable for, is an admitted conclusion; though the June strandings of the steamers Sahara at Bic, and the Indiana on the north shore of Anticosti are St. Lawrence casualties as yet almost unexplainable, especially in the latter case, where the vessel was found to be about seventy miles out of her course, however, even below Quebec to the sea a good deal remains to be done in the improvement of buoys, light-houses, fog signals, telegraph and life-saving stations, and other matters of that kind, all of which we believe is also being attended to as quickly as the Government can see its way to do so.

The question of marine insurance in relation to the several months of open navigation on the St. Lawrence is also of vital importance to the commerce using that route. It has been stated that a modern passenger and cargo steamer of 8,000 or 10,000 tons capacity will cost in the neighborhood of \$500,000. The annual insurance on that steamer's hull, plying between New York or other American ports and Europe, would be about 4 per cent., or say \$20,000 per annum, while trading to Montreal her insurance would be about 9 per cent., or 5 per cent. more, this would mean \$45,000 premium on the annual basis, it follows that the extra insurance against the St. Lawrence route would amount to \$25,000 per annum, or \$5,000 per voyage, counting five voyages, which is about the average number that steamers make to the St. Lawrence during the summer months. The insurance on cargo is also very much heavier via the St. Lawrence than via United States ports, ranging from 50 per cent. in the summer months to 100 in the fall, a terrible handicap to the St. Lawrence trade, which, of course, could be removed when the St. Lawrence route is made as safe as that to New York.

With all that the government and private interests may or can do, towards making navigation safer, the St. Lawrence route, river and gulf, will be always a more or less dangerous one. Approaching from seaward or at the entrances to the gulf, either by Belle Isle or Cabot Straits, strong variable currents are met with, ice floes in their season, and frequent heavy fogs, so that it is no wonder the locality from Sable Island inward has so bad a character. As regards the Belle Isle passage, it is known that the great objects to the route are: The tortuous, narrow straits; the treacherous tides and currents; the rugged, unlighted coasts, and the ever prevalent fogs and

ice floes. The narrowness of the passage, forty miles long and nowhere more than fifteen miles wide, or say an average of twelve miles, gives the mariner little margin to work upon. The approaches from either end have been insufficiently lighted; and no telegraph lines established, besides the physical characteristics of the region make it difficult to provide the safeguards which are essential to make the route even comparatively safe. Even with the best appliances for this purpose which human ingenuity could devise, it would be extremely difficult to cope with the adverse natural conditions. With the passage so narrow, with the changeful currents setting into it from either entrance and the dense, almost palpable fog which enshrouds the whole region, and is rarely, if ever, absent, the wonder is not so much that disasters are so common, but rather that they do not occur more frequently.

The period of annual navigation is about seven months. The St. Lawrence river freezes up at the close of November and the resultant ice floe does not go to pieces until the end of the following April, when it is discharged into the gulf and is borne out by the current through Cabot Strait into the Atlantic. From May 1, when navigation opens until about July 15, Cabot Straits offers the only route. Ocean steamers cannot attempt the passage of Belle Isle Strait before the latter date, because of the ice floes which block it being swept down from the Arctic ocean along the Labrador coast and south past the eastern front of Newfoundland.

Notwithstanding all that may be said against the St. Lawrence route, the passage from Montreal to Liverpool is about 500 miles shorter than from New York. Better coastal lights, fog signals, both surface and submarine, wireless telegraphy, and, as we have said, every possible aid will be given in the future by the Canadian Government, we would, however, advocate a more rigid examination, and ask that better requirements be insisted upon before St. Lawrence pilots are given a full branch license. Those in charge of ships in the N. American trade are usually considered experts at their business, it is doubtful if all the pilots are, and even the majority of them may still have something to learn and would accept the teaching, if the future qualifications required them to do so.

COMPASS TERMS.

THE local inspectors of steamboats being the examining officers before whom all persons desiring a license must appear, should see to it that deck officers are conversant enough with compass terms to at least give intelligent bearings of an object when so required. It is not unfrequently the case that an occurrence is noted, say, "On the course from one point or port to another, and about so many miles off the land," or as in the case of a serious grounding on a hidden and uncharted rock on Lake Michigan the position was given last week as "On the course from Chicago to Manitowoc, Wis., about four miles south of Manitowoc, and two and one-half miles off shore the vessel struck a rock with but thirteen to fourteen feet of water over it." This singular experience happened to a large, valuable steel steamer in a locality which has been sailed over for many years, and if ever previously reported still seems to be uncharted, at the same time, finding these obstructions through taking soundings at the expense of a metal steamer's bottom shell plating, is not the most modern and economical way of locating hidden dangers, so that, when such occurrences take place, as they do from time to time, the least that can be expected from the deck officers of a vessel is that they should be able to determine and give the accurate location, with bearings, etc. About four miles south is a guess, or eye measurement of distance, given for several different angles rolled into one, as south might mean compass, corrected compass, magnetic or true south, and on any of these lines of bearing, two and one-half miles, could possibly mean two, two and one-half, or three miles off the land. It is slight wonder that the Light-House Inspector for the district remarked that "The information given was very meagre." Expressions from owners and underwriters were probably more emphatic and less meagre. The blame of the inadequacy lies on the shoulders of the officers of the steamboat inspection service, for licensing men not thoroughly acquainted with compass terms.

It is to be hoped that this license cancellation question will soon be settled, and settled properly. The licenses held by masters, mates and pilots in the Atlantic and coastal service is of no more weight than those held by harbor tugmen working in a comparatively obscure creek. This feature has perhaps been overlooked by those solely interested in the question as it applies to lake tugs. The local inspectors must be careful not to put a rod in pickle to chastise themselves with at a later date.

CONGRESS adjourned July 1. The River and Harbor Bill contains adequate and liberal appropriations though the nations' Dads were by no means munificently extravagant.

FOREIGN COMMERCE.

By WALTER J. BALLARD.

Judging by the figures for 1902 as recorded to April 30, by the Treasury Bureau of Statistics, we can safely estimate for the full year ending June 30. A comparison with 1892, shows great progress in our sales to the various Asiatic divisions.

	1892.	1902.
China	\$ 5,663,497	\$25,000,000
Japan	3,290,111	23,000,000
Hongkong	4,894,049	8,000,000
British East Indies	3,674,307	5,000,000
Dutch East Indies	1,372,035	2,000,000
Russian Asia	120,200	1,000,000
All of Asia	19,500,000	64,000,000

We also show good headway in our shipments to the various divisions of Oceania.

	1892.	1902.
British Australasia	\$11,386,677	\$ 30,000,000
Philippine Islands	60,914	5,000,000
Hawaii	3,781,627	20,000,000
Total to Oceania	15,572,767	60,000,000
Total to Asia and Oceania	35,000,000	124,000,000

These figures show a gain in 1902 over 1892 of \$89,000,000, or over 254 per cent.

This is very gratifying, but the question immediately arises, how much greater would have been our gain had we possessed regular lines of American owned ocean steamships making weekly sailings to all the principal ports of Asia and Oceania? Think of the immense amount we shall have paid out to foreigners for freights on the \$124,000,000 shipped, and to be shipped, in 1902.

Without enlarging on the national prestige we have failed to gain, is it not humiliating that our Consul-General at Bangkok, Siam, is obliged to say, "In eighteen years I have not seen a single vessel in this port flying the American flag at the mast head, except one gunboat."

Schenectady, N. Y., June 30.

RECOGNITION FOR SAVING LIFE.

Where due recognition for bravery and skillful efforts in saving life obtains, it lends an impetus to the personal efforts of a large class of men who might otherwise be somewhat lukewarm and feel disinterested when such occasions or opportunities cross the path of their daily walk in life and while pursuing their usual avocations.

On Thursday last at Owen Sound, Ont., there was presented from the Dominion Government, the rewards for bravery to the master and crew of the Canadian Pacific Railway Co.'s steamship Athabasca, for saving thirteen lives from the wrecked and sinking United States barge Preston, in Lake Superior, during a storm, June 29, 1901. The Town Hall was packed to the door, and thousands were turned away. Mayor Reid occupied the chair and called upon Dr. Horsey, M. P., to make the presentations on behalf of the Dominion Government. Capt. Geo. S. McDougall was presented with a handsome sterling silver water pitcher; First Mate McPhee, with a splendid pair of binoculars; Chief Engineer Wm. Lockerbie, with a gold medal, and the rest of the crew with silver medals, all suitably engraved. Commemorative of the occasion, Dr. Horsey characterized the rescue as one of the most heroic and humane he had ever heard of. He was indefatigable in his efforts in successfully securing the well deserved recognition.

Dr. Sproule praised the captain and crew for their bravery, declaring the record would be handed down to posterity.

Mr. N. Stewart Dunlop, tax commissioner for the C. P. R., who was a passenger on the steamer, made a capital speech, relating the story of the various rescues and, on behalf of the railway, thanked the Government for the distinction conferred upon the officers and crew of the company's vessel.

Capt. McDougall responded suitably amid deafening cheers. The captain was previously presented with an illuminated address by the passengers, a parchment certificate by the Royal Humane Association of Canada, for distinguished bravery, and a gold watch and chain from the President of the United States for his humane and gallant services.

ORDERS FOR A FLEET OF STEEL STEAMERS.

The Great Lakes and Quebec Transportation Co., A. B. Wolvin, Duluth, general manager, placed a contract this week with the American Ship Building Co., for a fleet of ten steel steamers. Their general hull dimensions will be 242 feet keel, 43 feet beam, and 26 feet depth of hold. Engines triple-expansion and boilers of the Scotch type.

The United States Transportation Co., Capt. W. W. Brown, Cleveland, general manager, added one more to the fleet of five contracted for last week, all of which are 6,000 ton steel cargo steamers.

Plans and specifications are being got out by the Detroit Ship Building Co., for two large side-wheel passenger steamers, to the order of the Detroit & Cleveland Navigation Co., for 1903 delivery.

Other contracts are also being figured on. The entire work of the foregoing including engines, boilers and equipment, will be carried out by the American Ship Building Co., at their several plants.

LAKE PORTS.

The story of the development of the industries of the lake region and the growth of interlake commerce is written in the histories of the great cities of commercial and manufacturing importance which line the American shore of all the lakes.

Chicago, the mistress of these inland seas, is the food market of the world and the commercial center of the American nation.

The Great Lakes have made Buffalo the second city of importance in the Empire state, the greatest point of exchange between rail and water traffic on the globe, and the fourth port of the world in the volume of its tonnage.

They have made Cleveland, near the mid-shore of Lake Erie, an iron and steel center of manufacture, second only to Pittsburgh.

Detroit, the oldest city on the lakes, and most closely associated with their history, is also the most beautiful. With nine miles of water frontage and a magnificent city park on one of the large islands in the river, it is even more picturesque in its approaches than Cleveland-on-the-Bluffs. It has grown so steadily in commercial importance that its business characteristics now possess a greater interest than either its scenic features or historic localities.

Milwaukee, the second city of importance on Lake Michigan, is the brewing center of the world, but it manufactures more iron than beer, and nearly half as much flour, and does an immense business in meats and leather.

Duluth, the commercial ruler of Lake Superior, has achieved a greatness almost equal to that predicted in the hyperbolic ridicule of Proctor Knott.

All of the cities of established commercial importance on the Great Lakes, except Duluth, have large shipyards, equipped for the construction of even the largest types of ocean vessel, Buffalo, Cleveland, Toledo, Chicago, Milwaukee and Bay City, at the head of Saginaw Bay.

Just across the St. Louis river from Duluth, her sister city of West Superior also has large shipyards, and it is there that the whalebacks, the curious craft that look like a huge boiler afloat, are built.—Ainslee's.

LAUNCH OF THE STEAMER PANAY.

The steel cargo steamer Panay, built to the order of the Erie Steamship Co., C. H. Carter, general manager, was successfully launched from the yards of the Chicago Ship Building Co., on Saturday last.

The general hull dimensions of the Panay, a sister ship to the Luzon, recently launched from the same yards, are 356 feet in length, 50 feet beam and 28 feet depth of hold. Miss Maud Carter, daughter of the owner, christened the new craft. The Panay has been chartered for the season by the Clergue syndicate, to carry ore from the Michipicoten mines, and will be delivered Aug 1.

LOSS OF THE STEAMER GEORGE DUNBAR.

The wooden steamer George Dunbar, with coal from Cleveland to Alpena, foundered on Lake Erie near Kelley's Island, on Sunday, with the loss of six of her crew.

The Dunbar, 238 tons, was owned by the Saginaw Bay Co., built in 1867 at Allegan, Mich., classed A2½ in Inland Lloyds, and valued for insurance purpose at \$9,000. The cargo was insured but it is understood that no insurance was placed on the hull or freight.

LAKE FREIGHTS.

Ore tonnage continues in good demand and chartering is active at the old figures. The steel trust is taking boats freely and ore carriers are getting good dispatch all around. The movement is heavy and the docks are in better condition than they have been for some time.

The coal freight market is in practically the same condition it was a week ago. Offerings of Lake Michigan tonnage are liberal, and owing to the light receipts vessels are losing considerable time at the docks. The Lake Superior rate is considered low by vessel owners, but chartering is fair.

In spite of the fact that the members of the Lumber Carriers' Association laid up a portion of their tonnage, and diverted some into other trades, vessels are more plentiful than cargoes and the brokers are having trouble finding

prompt cargoes. The information was received that the rate between Duluth and Chicago had been reduced to \$2.25, whereas heretofore it has been the same as the Duluth and Ohio port rate, namely \$2.50. It is not difficult for the shippers to conjure up the possibilities of a similar reduction of Ohio ports which, however, the owners say is not at all likely. Vessels in that trade claim that they have accepted no reduction in rates as yet. They know that the situation is sure to improve a little later on. Rates certainly would be way off by this time had it not been for the Lumber Carriers' Association.

Grain in small amounts was on the Chicago market at 1½ cents for corn and 1¼ cents on wheat, to Lake Erie, but no full cargoes were to be had. Holders of the corn delivered on contract, aggregating 2,500,000 bushels, have no inquiry for vessel room to move it forward, and it is not known how the division between lake and all rail will be made. The lines loaded up with grain for the next few days, but outside of that business nothing was done. One of the Canada-Atlantic boats was diverted from Depot Harbor for Buffalo. Duluth wheat receipts continue light, and it is likely that there will now be no change until the fall crop begins to come in. This is contrary to the opinion of most of the wheat men last winter and spring, as they believed the business would be heavy during the entire summer.

For a time grain men were of the opinion that farmers in the west were holding back their grain, but it is now generally admitted that the crop seems to be exhausted, were it not for stock in elevators the mills would be obliged to close on account of the lack of wheat to grind. Shipments last fall were also comparatively light.

FLOTSAM, JETSAM AND LAGAN.

The Escanaba Iron Port says that the Chicago, Milwaukee & St. Paul Railroad Co. will soon commence the construction of another monster ore dock adjacent to its present one at North Escanaba. Work is expected to begin upon it this month.

The clamshell ore unloading machines, four of which have been erected at Conneaut, made a record on Saturday last by discharging 95 per cent. of the cargo of the steamer James Gayley without shoveling or trimming to buckets.

The steamer Transit, which was used last year as a launch for the government engineer at Houghton, has been sold by the Bay City owners, to Ohio parties. The Transit is to be taken to the Ohio river, where she will be used for a pleasure boat.

An unusual arrival in the port of New York last Saturday was that of the lake built schooner Linerla, constructed at Manitowoc, Wis., in 1884, and hailing from Milwaukee. The vessel sailed from Menominee, Mich., on April 28. She had a cargo of lumber from Three Rivers, Quebec, and was twenty-four days on the voyage from that port. It is seldom that a sailing vessel of the Great Lakes comes to the Atlantic. The Linerla is commanded by Capt. Wilson. She will go from New York to New Orleans.

The death, at Frankfort, of Assistant Light-House Keeper S. K. King, has aroused much comment against Capt. W. P. Robertson, of car ferry Ann Arbor No. 3. The light-keeper's boat was in the path of the car ferry. The captain of the latter warned him to get out of the way. Before the light-keeper could do so, the car ferry smashed his boat, injuring him so badly that he died within fifteen minutes. The car ferry's captain, instead of stopping, continued across the lake. Witnesses claim that the ferry might have been stopped in time to save King's life. Local inspectors will probably investigate.

A report from Ashtabula states that the long continued fight between the tug trust and its employees is almost certain to result in the formation of a strong independent tug line at this port, even if the strike is settled at once. Local shipyards have been asked for figures for a new tug 80 feet over all, 17 feet beam, and 7½ molded depth, with powerful engines, to be completed by September, and if prices are satisfactory a contract will be closed within ten days. The boat is for local parties, and plenty of local capital stands ready to put a fleet of good heavy tugs in operation here. It is believed that because of the heavy commerce two lines of tugs would pay, even if the Great Lakes Towing Co. were free from labor troubles.

On Saturday, June 28, the American Line steamship Kroonland, the biggest vessel ever built in the United States, left New York on her maiden trip across the Atlantic. The ship was built by the Cramps, of Philadelphia, and so confident is the company of her ability to meet contract requirements that the right of preliminary tests was waived, and the voyage begun is also the trial trip of the big ship. The Kroonland's sister ship, the Finland, has just been launched at Philadelphia, and as soon as completed she will be put on the trans-Atlantic route, running alternately with the Kroonland. The two ships are 20 feet longer and of 400 tons greater displacement than the St. Louis and New York, also built by the Cramps for the American Line. They are luxuriously furnished and liberally equipped, though of moderate speed, being designed to make the trip across the Atlantic in eight days.



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TREASURY DECISIONS.

Amendment to regulations, U. S. Marine-Hospital Service.

TREASURY DEPARTMENT,
OFFICE OF SUPERVISING SURGEON-GENERAL M. H. S.,
WASHINGTON, D. C., June 21, 1902.

To commissioned officers and others concerned:

Department Circular No. 104, December 3, 1901, fixing the rate of commutation for officers on duty in charge of bureau divisions, is hereby revoked.

The following amendment to the regulations, U. S. Marine-Hospital Service, approved November 29, 1897, is hereby promulgated and shall take effect on and after this date:

Paragraph 70a. Commissioned medical officers serving in charge of the administrative divisions of the Marine-Hospital Bureau (the miscellaneous division excepted) shall receive compensation of \$2,900 per annum and allowances and commutation of their respective grades. The officer in charge of the miscellaneous division shall receive compensation of \$2,000 per annum and allowances and commutation of his grade.

WALTER WYMAN,

Supervising Surgeon-General U. S. M. H. S.

Approved: H. A. TAYLOR, Acting Secretary.

WHITE HOUSE, June 21, 1902.

Approved: T. ROOSEVELT.

Amendment to regulations, U. S. Marine-Hospital Service, relating to relief furnished officers of the Revenue-Cutter Service.

TREASURY DEPARTMENT,

OFFICE OF SUPERVISING SURGEON-GENERAL M. H. S.,
WASHINGTON, D. C., June 21, 1902.

To commissioned officers, acting assistant surgeons, and others concerned:

The following addition to the revised regulations for the government of the United States Marine-Hospital Service, approved November 29, 1897, is hereby promulgated, and will be in force on and after this date:

Paragraph 478b. Commissioned medical officers and acting assistant surgeons of the Marine-Hospital Service will render professional aid to officers of the Revenue-Cutter Service residing at the port, at their residences, when said officers of the Revenue-Cutter Service for any reason can not avail themselves of the accommodations offered by the marine hospital, and when they are physically unable to present themselves at the marine-hospital office. The medicines or appliances prescribed shall be furnished from the dispensary of the Marine-Hospital Service when practicable.

WALTER WYMAN,

Supervising Surgeon-General M. H. S.

Approved: H. A. TAYLOR, Acting Secretary.

WHITE HOUSE, June 21, 1902.

Approved: T. ROOSEVELT.

Violation of Rules of Navigation—Liability.—Act. Cong. Aug. 19, (S. 6 St. 320-327) art. 20, requires that, where a steamboat and sailing vessel are in danger of collision, the steamboat shall keep out of the way. Article 21 prescribes that, where one of two vessels is required to keep out of the way the other shall hold its course and speed. Article 22 provides that the vessel required to keep out of the way shall if possible avoid crossing ahead of the other. Article 23 declares that the vessel required to keep out of the way shall if necessary, slacken the speed, stop, or reverse. A steam ferryboat came practically to a standstill in Norfolk harbor to permit a steamboat to pass, and then rang up, and passed full speed under its stern. At that moment a sloop was observed passing down the harbor immediately across the steamer's bow, and the ferryboat, instead of complying with the rules, whistled for the right of way, without slackening speed or reversing; and a collision resulted, in which libellant's intestate, a passenger on the sloop, was killed. Held, that the ferryboat was at fault and liable. The Elizabeth, 114 Fed. Rep. (U. S.) 757.

CANALS—LAKE ERIE TO NEW YORK.

(VIEWS OF MAJ. T. W. SYMONS).

There are three possible routes for such a canal from Lake Erie to New York. One follows in general the line of the Erie Canal from Buffalo to Albany and down the Hudson to New York. This route, while possible, is not practicable, if only for two reasons: (1) the cost, and (2) the length of time required for the passage by vessels. Along the line of the Erie Canal and very largely due to the canal there has been built up a chain of cities, which has not its equal in importance in America; Albany, Troy, Watervliet, Amsterdam, Herkimer, Schenectady, Little Falls, Utica, Rome, Syracuse, Lyons, Rochester, Lockport, Tonawanda and Buffalo being the principal ones. The construction of a ship canal through or around these cities, with their neighboring railways and highways, would be exceedingly expensive. Along this route the distance from Buffalo to Albany would be 350 miles of which at least 250 miles would be represented by a narrow, artificial waterway, in which loaded ships could not make more than four miles an hour; so that the time consumed in passage, irrespective of other considerations, would render the route impracticable. If this route is impracticable for a canal suited to lake vessels, it is doubly and trebly impracticable for the much larger and deeper canal suited to ocean vessels.

In both of the other possible ship canal routes the passage is made from Lake Erie to Lake Ontario, and the latter becomes part of the route. In one case Lake Ontario is left at Oswego, and the ship canal route follows up the Oswego river to the Oneida river, thence up the Oneida river to Oneida Lake, through the lake and on and over the divide to the Mohawk river down through the valley of the Mohawk to the Hudson and down the Hudson to New York. Though this route, also, would be entirely within the territory of the United States, there are several serious objections to it. The first important objection is the great amount of lockage required. To lock down from Lake Erie to Lake Ontario there would be 326 feet of descent; to lock up from Lake Ontario to the summit level above Oneida lake, there would be 172 feet of ascent; and to lock down from this summit level to the Hudson at or near Troy or Albany, there would be 418 feet of descent—916 feet in all, making the passage one way. As every foot of lockage costs a large sum and consumes time in passage, the objection to an excessive amount of lockage is obvious. Second the supply of water to the summit level above Oneida lake, for a large ship canal is somewhat problematical and certainly is expensive. Again, the building of a large ship canal through the thickly populated valley of the Mohawk would be attended with many difficulties and be very costly.

The third ship canal route follows down Lake Ontario to the St. Lawrence river; thence down the river, using the main river channel, to the vicinity of Ogdensburg; thence still on down by canals, around the rapids, using the river itself where possible, to some point to the northwest of the lower or the northern end of Lake Champlain. Here the St. Lawrence would be left and the canal would be built from the river to Lake Champlain which would be followed to its head. From the head of Lake Champlain the route would be by canal across the Upper Hudson, then down this river, past Troy and Albany, to New York.

This route has some advantages and some disadvantages. It has less lockage than the Oswego-Oneida route and a very large portion of it is in the wide, free waters of Lake Ontario, the St. Lawrence river, Lake Champlain and the Hudson river; the water supply for lockage is unlimited, and the canal by this route is probably much cheaper than by any other. On the other hand, it is the longest route and it has the marked objection that it is not entirely within our own dominion; a portion of it on the St. Lawrence river and the canal from this river to Lake Champlain being in Canada. And this leads up to the fact that the natural outlet of the Great Lakes region, the line of least resistance and the shortest and cheapest route for a

ship canal to tidewater, is by the St. Lawrence to the seaport of Montreal, which has the distinction of being farther away from the sea, farther inland, than any other seaport in the world habitually visited by ocean ships. It is a remarkable fact that it is about ten times as far from the sea as any other seaport.

The question then arises: If a ship canal be built from Lake Erie to New York by the Ontario, St. Lawrence, Lake Champlain route, would it not be more apt to redound to the disadvantage of American commerce than to its advantage? In my opinion it certainly would. Such a ship canal route would follow down the St. Lawrence until within 30 to 50 miles of the seaport of Montreal. It would then branch off to New York, which would be reached only after traversing some 350 miles of canal, lake and river; and when at New York commodities destined for most foreign markets would be farther away from these markets than when they left the St. Lawrence. Such a canal would be of some benefit to our local and strictly domestic business, but it would just as certainly be a detriment to our inbound and outbound foreign commerce, tending strongly to take it away from New York and to build up the commerce of the port of Montreal. Of course, to reach Montreal, Canada would have to add a short section to our ship canal. But this she would certainly do; and then it would be inconceivable that grain, lumber, iron ore, manufactured steel or other articles destined for foreign markets, reaching within 50 miles of Montreal, would retrace their steps through 350 miles of a contracted waterway back to the port of New York.

For New York to build such a canal or permit it to be built would, in my opinion, be to commit commercial suicide. There would, of course, be some interests along the route which would be benefited by it; but the state as a whole would be tremendously injured. The same is true, although to a less extent, in regard to a ship canal built by the Ontario, Oswego, Oneida, Mohawk route. If the Great Lakes freighters, carrying 7,000, 8,000 or 9,000 tons of produce, should go into Lake Ontario, they would continue on down the St. Lawrence as far as Prescott or Ogdensburg, only about 120 miles from Montreal and then transfer into 2,000 or 3,000-ton barges to be taken through the Canadian canals to Montreal. All foreign bound commerce would undoubtedly take this course rather than the route from Oswego to New York, through 320 miles mostly of contracted and dangerous waterway, with its 590 feet of lockage. It is altogether probable, too, that in this event Canada would soon enlarge her St. Lawrence canals so as to permit the Great Lakes vessels to run directly to Montreal, and the resultant benefits would in any event be far greater to Montreal than they would be to New York.

WHISTLE SIGNALS—RULES OF THE ROAD.

Speaking of the Kirby-Egan collision Capt. John Stevenson, Detroit, said: "There are too many of these collisions and the matter should be taken up by the lines running passenger boats out of this city. They should instruct their captains to give all freight boats a wide berth. It is not a question of law or rules of right of way, but of safety. If an accident did happen to one of the big passenger boats loaded with one or two thousand people, it would be a horrible thing. There is no use waiting to exchange whistles, the passenger steamer should keep away from them in the first place. Usually she can because the passenger boats are lighter draft, and their captains know the water better than the men on the freighters, who are plying the whole chain of lakes. The freighters are usually loaded to the limit of the channel, and are afraid to give way. They whistle for port or starboard, but keep right on the range. The passenger boats ought not to stand on any question of right or law, with so many lives involved."

These sentiments are indorsed by other vesselmen and captains. It is added that Capt. Fox, of the Kirby, is as skillful as any man in keeping his boat at a safe distance from danger, and people are wondering how the Egan ever got into such close quarters with him.

SUN'S AMPLITUDES.

The following approximate amplitudes of the sun's rising or setting will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the sun's setting. The bearing may be taken when the sun's center is on the horizon, rising or setting. The elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation, or the total difference between compass and true, or geographical bearings.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.				
Date.	Amplitude.	Bearing P'ts.	Bearing Comp.	
July 4	E. 32° N. = N. 5½ E. = N. E. by E. ½ E.			
July 11	E. 30° N. = N. 5½ E. = N. E. by E. ¾ E.			
LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.				
Date.	Amplitude.	Bearing P'ts.	Bearing Comp.	
July 4	E. 33° N. = N. 5 E. = N. E. by E.			
July 11	E. 31° N. = N. 5¼ E. = N. E. by E. ¼ E.			
N. END LAKES HURON AND MICHIGAN, LAT. 46° N.				
Date.	Amplitude.	Bearing P'ts.	Bearing Comp.	
July 4	E. 34° N. = N. 5 E. = N. E. by E.			
July 11	E. 32° N. = N. 5½ E. = N. E. by E. ½ E.			
LAKE SUPERIOR, LAT. 48° N.				
Date.	Amplitude.	Bearing P'ts.	Bearing Comp.	
July 4	E. 36° N. = N. 4¾ E. = N. E. ¾ E.			
July 11	E. 34° N. = N. 5 E. = N. E. by E.			

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly. If to the left, the deviation is westerly.

OCEAN DERELICTS.

Perhaps it is the natural instinct to personify every craft that floats—perhaps it is because they were once the domiciles of living beings, that makes human interest in derelicts universal. They are the embodiments of pathos, the menace of tragedy. From the slavery of man they have gone forth to the freedom of the sea, which means, after all, that they are stumbling blindly on to that destruction which ultimately awaits all things which are without the law. Some of them last but a day; others usually about twenty, but in 1873 an average of about thirty-five a month was reported. Most derelicts are made off the coast of the United States in the Gulf Stream, and they are prone to follow in the wake of the liners. Often they follow the ocean river around its great circle, and many of them get into the Sargasso sea.

The most notable derelict was the Fanny E. Wolston, a three masted schooner, lumber laden, which was abandoned October 15, 1891 and was last seen in 1894. She drifted at least ten thousand miles, following the great circle in a zigzag way. In this she differed from the W. L. White, a schooner which was abandoned off Delaware during the blizzard of 1888. The White was a fast traveller and started immediately for Europe. At times she attained a speed of thirty-five miles a day. She floated first to the Grand Banks, and hid in the fogs that hang over that region. She stayed doggedly in the mist, float-

ing around and around in a comparatively small circle, looming up suddenly under the bow of liners, sending cold terror to the hearts of fishermen, colliding now and then with other vessels and making a general nuisance of herself. After several months of this fun, she suddenly left one day and continued her journey to Europe, grounding at last on one of the New Hebrides after a cruise of ten months and a drift of 6,800 miles.

Then there was the Fred B. Taylor, a schooner cut in half off our coast by the steamship Trave. The people on the Trave waited to see the two parts sink, but, strangely enough, they remained afloat. They became separate derelicts, and each went on a voyage of its own. The stern stood high out of the water, and the wind blew it north, but the bow, sinking low, was carried south by the cold shore current which runs from Labrador south to Hatteras between the coast and the Gulf Stream. The bow was destroyed off North Carolina. The stern grounded on Wells Beach.—Theodore Waters in Ainslee's.

LAKE SHIPBUILDING COMBINE.

Another lake shipbuilding combine is upon the tapis, and it is said that if the plans which several owners of plants are at work on go through there will be another combination on the lakes before the opening of next season. The scheme is to get all the independent yards where steel vessels are built or repaired into one organization, and that means that all the plants of any importance not controlled by the American Shipbuilding Co., with the exception of the Davidson yard at Bay City, will be taken in.

The plants that the promoters of the new consolidation are said to have lined up are the Craig Ship Building Co. falo, Columbia Engineering Works, of Marine City, falo, Columbia Engineering Works, of Marine, City Burger & Burger, of Manitowoc, Jenks Ship Building Co., of Port Huron, and the Shipowners' Drydock Co., of Chicago.

Very little can be learned at the present about the deal, but it is known that two of the principal owners favor the forming of a combination of all the independent yards and they have been at work on the plans for some time past. A conference of several of the shipbuilders was held at Chicago last week.

The general opinion is that Capt. James Davidson, who operates a wooden shipyard and a big drydock at Bay City, will not go into the deal.

NOTES.

"SYREN AND SHIPPING," a weekly class journal of London, Eng., has organized an American company under the name of the Syren & Shipping (America, Limited), with a capital of \$100,000, to issue a weekly publication simultaneously here with the European edition. The company have taken a suite of offices on the third floor of the Maritime Building, New York City, and expect to make their initial issue in this country some time in July. Mr. Joseph L. Carozzi, editor-in-chief of the Syren and Shipping, is at present in New York taking charge of the company's affairs.

ANOTHER HERO has taken to writing, and this one perhaps the most universally popular with his men and with the people at large that the Spanish war gave us. "Dick" Wainwright, who destroyed the Spanish torpedo boats with the converted yacht, the "Gloucester," at Santiago, has an article in the World's Work for July on the Naval Academy at Annapolis, of which he is Superintendent. But it is pleasant to note that Commander Wainwright is as modest in his writing as he is in his talking. The article is all about the Naval Academy and its preceding superintendents. The only suggestion of Wainwright is the signature of the article's author.

THE American Association for the Advancement of Science was opened in Pittsburg on Saturday, with the meeting of the Society for the Promotion of Engineering, one of the foremost bodies of its kind in the world. The sessions were opened in Carnegie Institute this morning, with the presidential address delivered by Professor Robert Fletcher, of the Thayer School of Engineering, of Dartmouth College. During the day technical papers were presented by Professor Charles F. Burgess, of the University of Wisconsin, Professor Edward Orton, Jr., of Ohio State University, Professor Charles P. Matthews, of Purdue University, Professor Robert H. Thurston, of Cornell University, Professor N. Clifford Ricker, of the University of Illinois, President Palmer C. Ricketts, of the Rensselaer Polytechnic Institute, and Professor George F. Swain of the Massachusetts Institute of Technology.

THE EQUATION OF TIME.

So important is the correct appreciation of the few minutes expressing the lateness or the fastness of the sun behind or in advance of true clock time, that a special name has been given to it—The Equation of Time.

It is not the speed of the earth in its orbit that is the standard of time. That varies from day to day. The rotation of the earth on its axis is the true measurer of duration to which we refer all events. If so, why is the sun not brought regularly to the meridian at exactly equal intervals of time? Because the onward motion of the ball, the earth, is not constant, and appearances mix up and confound the orbital motion of the earth with its diurnal rotation. The earth in its flight keeps bounding out and in from the mean circle of its orbit, thereby transforming the path to an ellipse cutting the circle four times in the year. Gravitation compels it to acquire velocity when approaching the sun and to lose velocity when retiring, and the law of the travel is, that the straight line from the center of the sun to the center of the earth describes equal areas in equal times. To simplify the statement, the moon is here neglected. The equal area described in 24 hours of mean time is contained in a less or a greater angle at the sun according as the earth is beyond or within its mean orbital circle. By the orbital motion of the earth the sun is made to go back about 4 minutes every day, making up one whole day in a year. This motion being at different distances from the sun is performed at different speeds, and hence arises the inequalities of the intervals between successive noons by the sun.

Such inequality of interval between successive culminations of the fixed stars, that is between the times at which the same star is on a certain meridian, does not exist; because of their great distance the inequality due to the same cause becomes so minute that it cannot be measured nor its existence detected by human power. The sun, however, is comparatively quite near to us, for it would take only a hundred years at a hundred miles an hour to accomplish the direct journey whereas at 470 times this speed the nearest fixed star would not be reached until 170 times a hundred years!

Government Proposals.

Sealed proposals will be received at the office of the Light-House Board, Washington, D. C., until 2 o'clock p. m., July 10, 1902, and then opened, for furnishing the materials and labor of all kinds necessary for the construction and delivery of the twin screw steel steam light-house tender Crocus for a fixed sum for said vessel delivered either at the Buoy Depot, Buffalo, N. Y., or at the Light-House Depot, Tompkinsville, N. Y., as will be determined upon by the Light-House Board. Proposals, plans and specifications can be had by applying to the Light-House Board, Washington, D. C., or at the office of the Light-House Inspector, Buffalo, N. Y. George C. Remy, Rear-Admiral, U. S. N., Chairman. 25-26

JAMES SPENCE ROBERTSON.

If JAMES SPENCE ROBERTSON belonging to Dundee, Scotland, who was, it is believed, about 1889 in Tawas City, Michigan, U. S., and who was, it is understood, latterly acting as a Steward on a Lake Steamer running out of Bay City, Michigan, U. S., will communicate with the Subscribers, he will learn something to his advantage.

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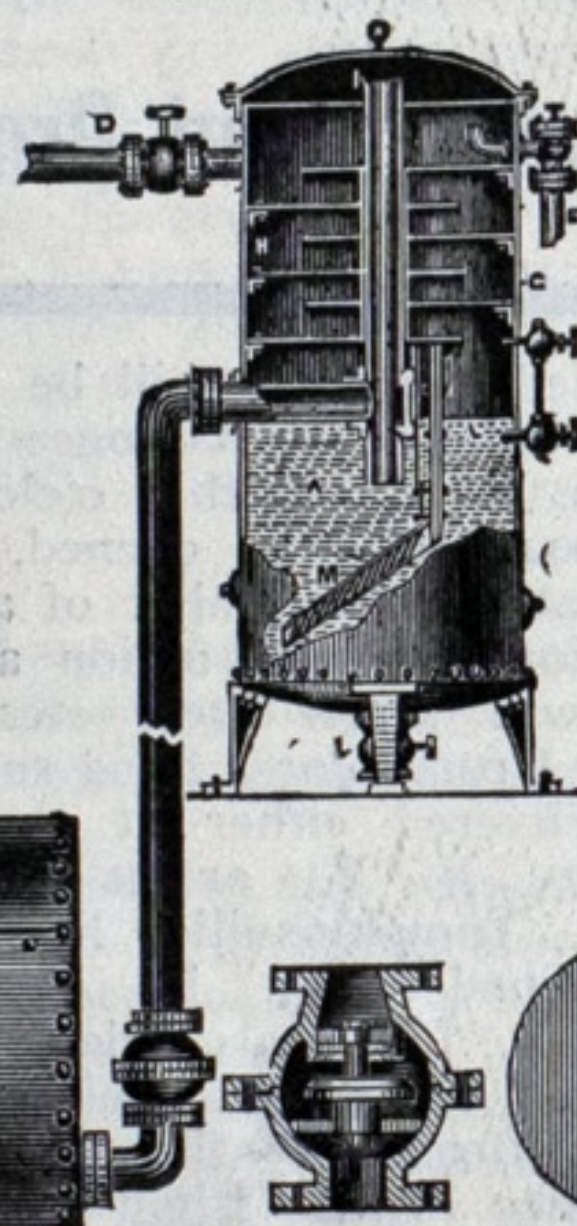
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Hendrick S. Holden.

Minnesota Iron Co.'s steamer Presque Isle.
American Steel Barge Co.'s steamer Alex.
McDougall.

Lake Michigan & Lake Superior Trans-
portation Co.'s steamer Manitou.

Bessemer Steamship Co.'s steamers S. F.
B. Morse and Douglas Houghton.

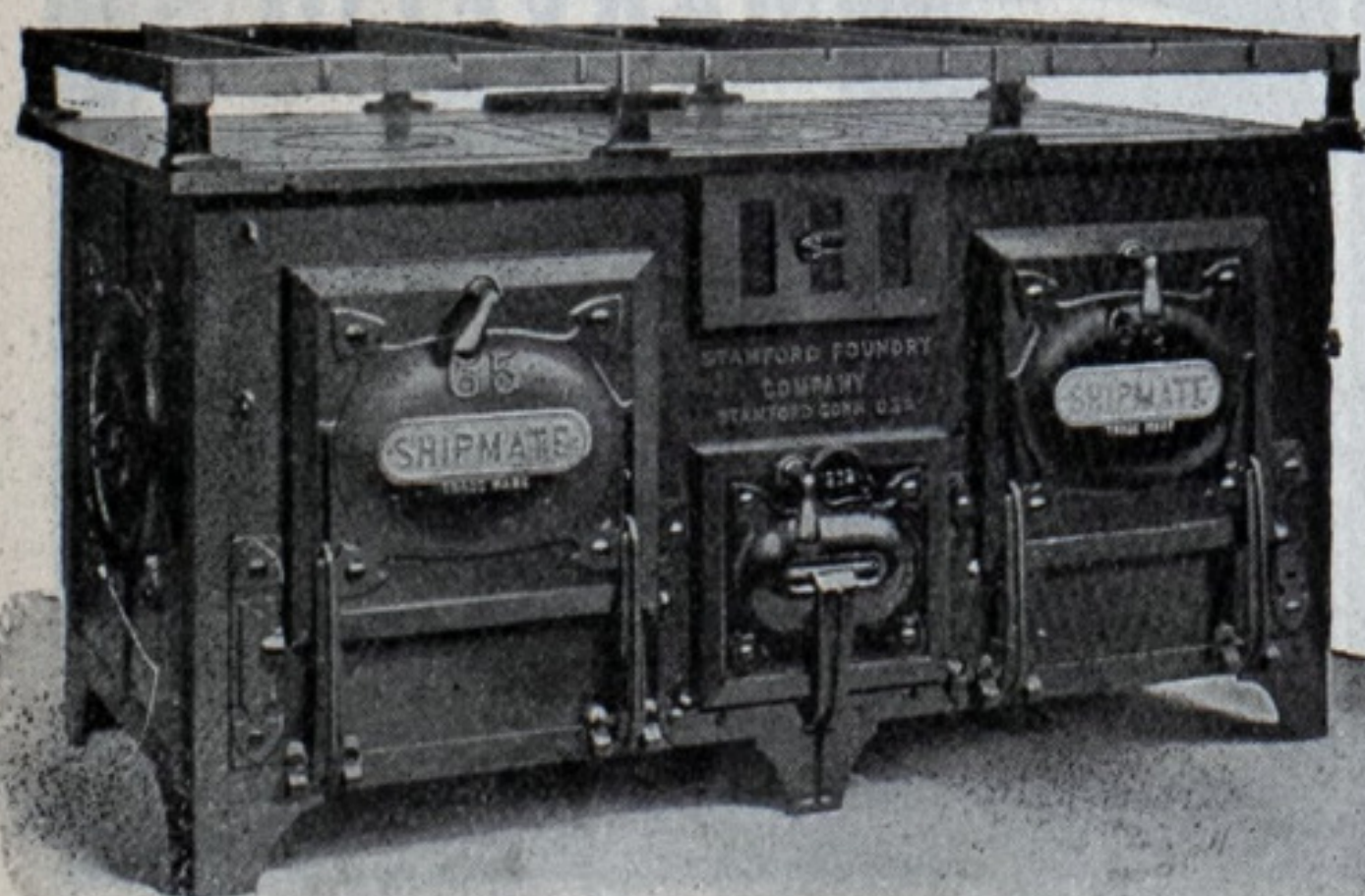
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Red Star Line's steamers Robert Mills and
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Wilson Transit Line's steamers W. D. Rees
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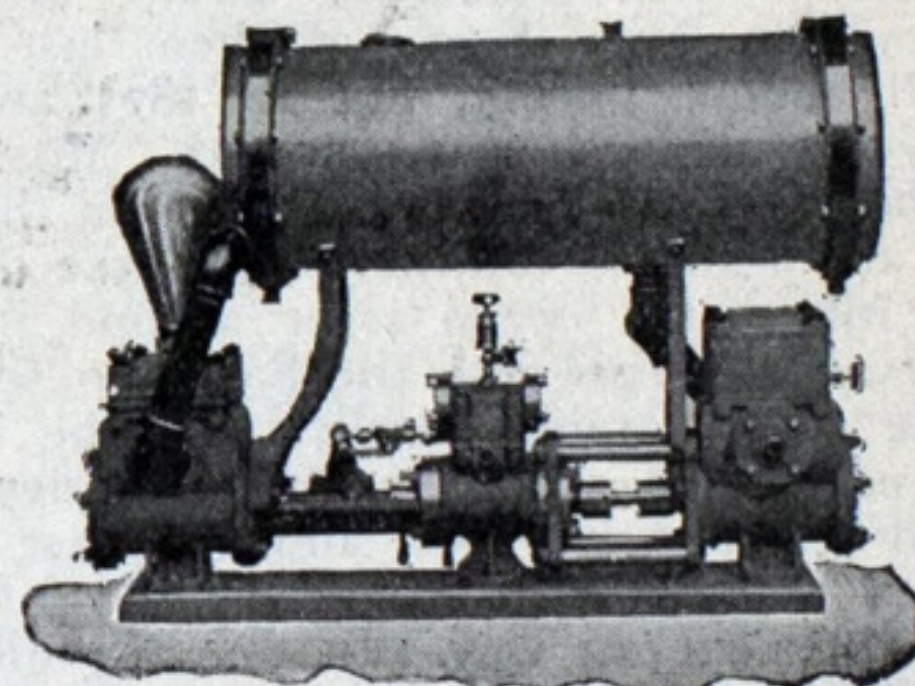


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CLEVELAND TUG MEN'S CASE POSTPONED.

The hearing of the first case against the Cleveland tugmen before the Local Inspectors of Steamboats, was to be held on Monday last, but was postponed at the request of the attorneys for the tugmen. The hearing was to have been on the complaint against Capt. Joseph Sweeney, the Manager of the Northwestern Towing & Wrecking Co., which operates the independent fleet. Capt. Sweeney was represented by Attorney Jenkins, who asked for a continuance without his client entering a plea. At the time this request was made the inspector's office was filled with legal talent, among those present being District Attorney J. J. Sullivan, four other United States attorneys, and Harvey D. Goulder, Esq., for the tug trust. The request was challenged and Mr. Jenkins said he made it doubting the jurisdiction of the tribunal. He said that he had been summoned only last Friday and had not had time to make an investigation, and until he was convinced that the tribunal had jurisdiction he would refuse to make a plea for his client or to permit him to do so. This caused a consultation among the attorneys for the prosecution and they decided to enter a plea of not guilty, that there might be grounds for a continuance of the case to come within the provision of the statutes. The case against Capt. Sweeney is probably more interesting than many that will be begun, since it is charged that he is dividing the profits of his towing business with the L. T. P. A., thereby proving, as the statement reads, that the tugmen have entered a conspiracy.

RESOLUTION PASSED BY THE LAKE CARRIERS.

At a meeting of the executive committee of the Lake Carriers' Association, held in Cleveland on Wednesday, the following resolution was unanimously adopted:

Resolved, That the thanks of this association and of every vessel owner on the lakes is due, and in behalf of the Lake Carriers' Association we most cordially extend our thanks and congratulations to Major W. H. Bixby, Corps of Engineers, U. S. A., engineer in charge, for the promptness, efficiency and zeal displayed by him, and the splendid success achieved in so quickly removing the recent obstruction to navigation at Sault Ste. Marie, caused by the wrecking of the bridge over the canal.

The White Star Line steel passenger steamer Greyhound, built at the Wyandotte yards of the Detroit Ship Building Co., is rated A1 in Inland Lloyds and given a valuation for insurance purposes of \$225,000.

LETTERS AT DETROIT MARINE POST OFFICE.

To get any of these letters, addresses or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

Bardin, H. W., Mars
Benson, N. C., Mars
Barbeau, Allie J.
Baarsen, Carl, Mingoe
Brain, David
Buehler, Ed
Burke, Wm G
Beaumont, Albert
Bethamey, Eugene
Bearsdorf Jennette, Mrs.
Blair, B. E., Reynolds
Chadsey, I. A., Italia
Cook, Geo
Carter, A. F.
Corbett, Jack
Crawford, Chas
Connell, Frank
Cameron, M
Davis, O. E.
Duffie, Carl, Lafayette
Dingwell, Ronald
Dow, James
Drake, Thos J
Denton, Leslie
English, Jno
East, J. H., G. Peavey
Eveland, Harry
Elsen, Michael
Ferguson, A. C.
Flynn, Jno, J. Duncan
Firestone, W. J-2
Flanders, Hurbert
Fleming, Geo, Griffin
Handy, Geo C
Halvorsen, Andrew
Hackleman, Fred, Fitch
Johns, Fred
Johnson, W. H.
Jones, Geo
Jansen, Drew Hebard

Locke, Fred
Laymond, V., Renseller
Moore, Hillard
Miller, W. F., Iron King
Morrison, Henry
Murdock, J. H.
Mackey, Frank
Mallett, Helbert
Morse, Albert, Corsica
McCurdy, Geo D
McEachren, Chas
Maclead, A. D.
McGrath, M. Spalding
McDonald, Jno, Futch
McIntyre, Sandy
Pratt, Alex
Pachin, Chas
Reinicke, Jno
Reno, Henry
Roller, Victor
Schurter, Geo
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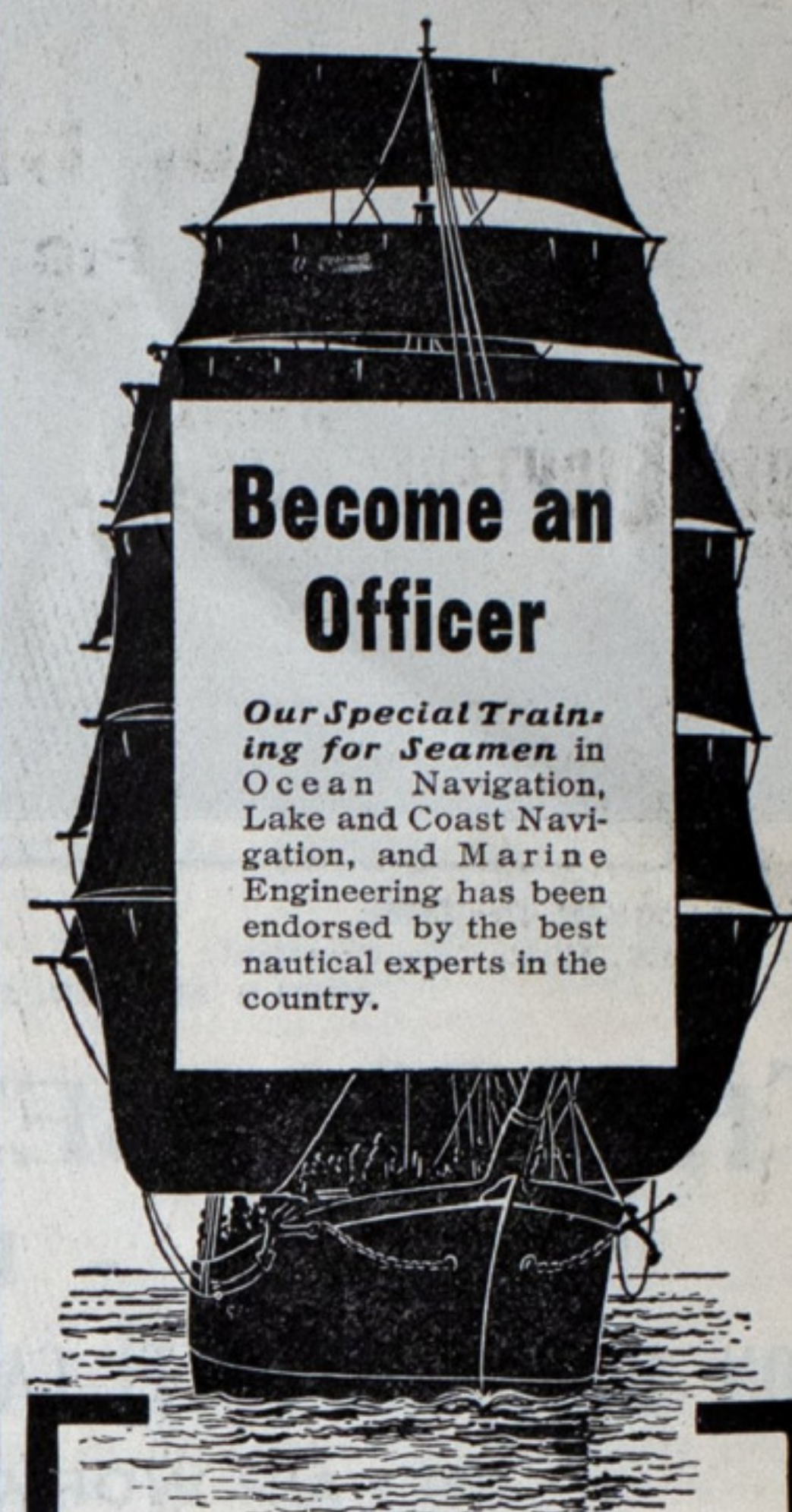
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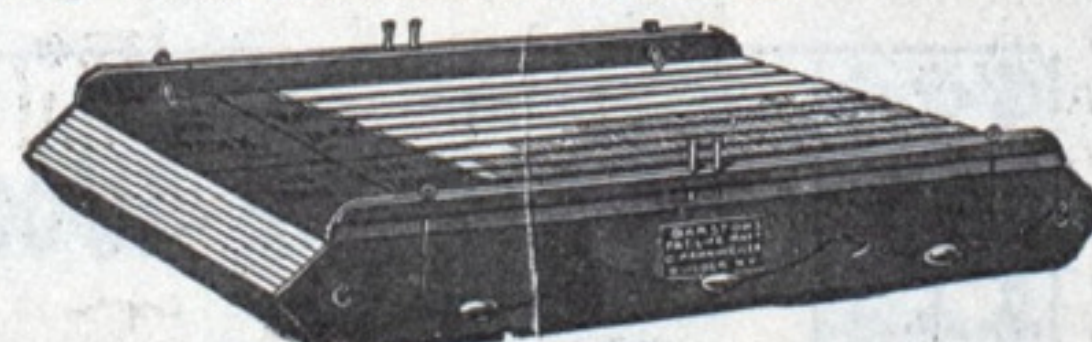
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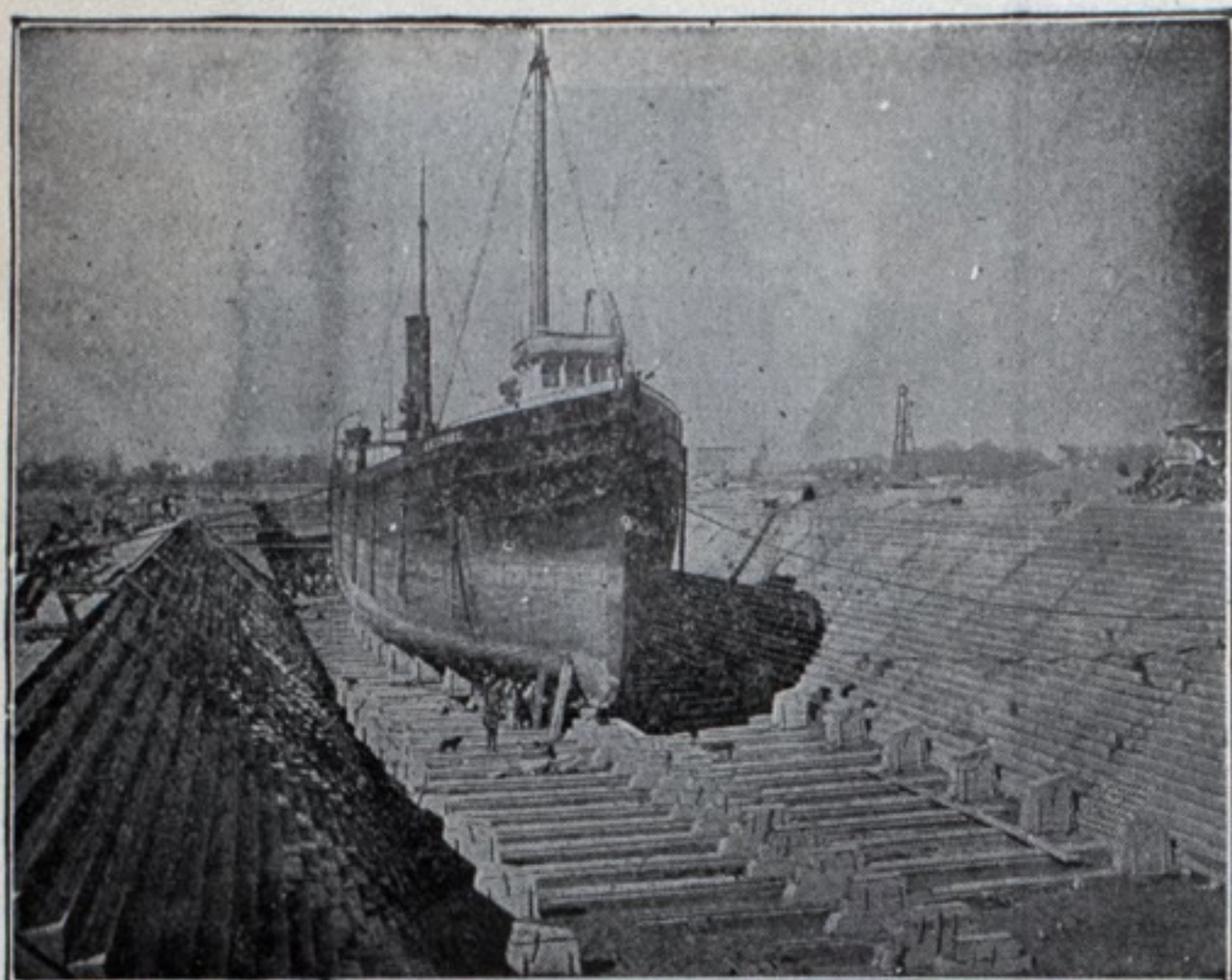
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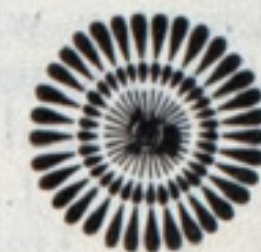
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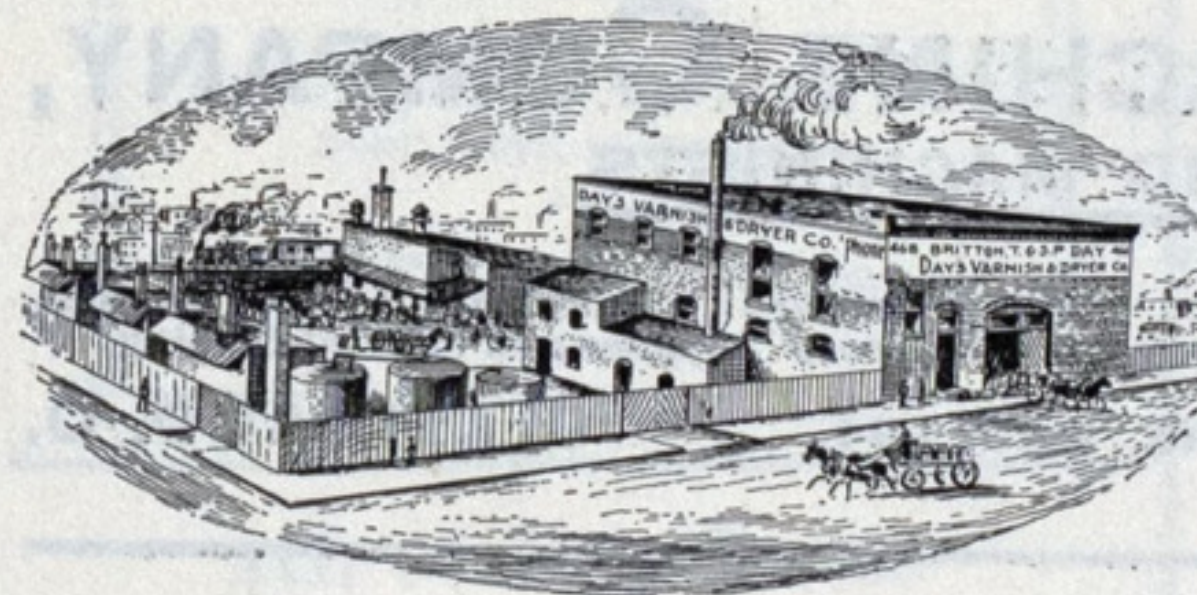
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